ENVIRONMENTAL • GEOTECHNICAL
BUILDING SCIENCES • MATERIALS TESTING

46555 Humboldt Drive
Novi, Michigan 48377
Telephone 248-669-5140
www.atcgroupservices.com

September 7, 2018

Mathew Sam
Detroit Public Schools
1601 Farnsworth
Detroit, Michigan 48202

SUBMITTED VIA EMAIL TO: mathew.sam@detroitk12.org

SUBJECT: **Drinking Water Screening Report**
Marquette Elementary/Middle School
6145 Canyon Street
Detroit, Michigan

Dear Mr. Sam:

ATC Group Services, LLC (ATC) is pleased to submit this Drinking Water Screening Report for the subject school. The drinking water samples collected from the school were submitted to Pace Analytical Services, LLC, for Michigan Department of Environmental Quality (MDEQ) Drinking Water Certified lead and copper analysis.

SCOPE OF WORK

At the request of the Detroit Public Schools (DPS), ATC collected drinking water samples as a general screening for copper and lead at the subject school. The water sampling conducted included the sampling of fixtures within teacher's lounges, kitchens, water fountains and pre-k classrooms. One (1) sample was collected at each outlet: a first draw (Primary) sample. The Primary samples were collected from outlets that had been inactive for a minimum of eight to eighteen hours. The fixture inventory locations including the sample locations are shown on the Fixture Inventory Locations Map included under Attachment A and fixture inventory photos including the sample location photos are included in a Fixture Inventory Photo Log under Attachment B.

The drinking water samples were collected in 125 milliliter, wide-mouth sample containers, containing nitric acid (preservative). Each sample container was labeled utilizing a unique coding system that identified: the type of drinking outlet sampled as well as the location.

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The samples were transported under chain of custody to Pace Analytical Services, LLC, located at 5560 Corporate Exchange Ct. SE Grand Rapids, MI for MDEQ drinking water certified lead and copper analysis, using analytical method EPA 200.8 rev 5.4.

FINDINGS

Analytical results indicate that nine (9) of the samples analyzed were above the EPA recommended limits of 15 micrograms per liter (ug/L) for lead. Additionally, five (5) of the samples analyzed were above the EPA recommended limits of 1300 micrograms per liter (ug/L) for copper. The table below summarizes the analytical results for the samples submitted. The laboratory analytical reports and chain of custody are provided in Attachment C.

Table 1 – Water Testing Results (September 6, 2018)

Sample Number	Location	Description	Total Lead (ug/l)	Total Copper (ug/l)
1-SR-SRF-1	Next to parent center in elementary school	Kitchen faucet	<1.0 ug/L	205 ug/L
1-111-B-6	Next to #5 (PK)	Bubbler	3.8 ug/L	118 ug/L
1-110-B-11	Next to #10 (PK)	Bubbler	<1.0 ug/L	139 ug/L
1-105-B-16	Next to #15 (PK)	Bubbler	6.7 ug/L	193 ug/L
1-108-B-21	Next to # 20 (K)	Bubbler	1.4 ug/L	345 ug/L
1-107A-B-26	Next to # 25 (K)	Bubbler	<1.0 ug/L	228 ug/L
1-109-CF/B-29	On the left	Kitchen faucet/Bubbler	2.9 ug/L	141 ug/L
1-104-CF/B-30	On the right	Kitchen faucet/Bubbler	1.6 ug/L	221 ug/L
1-103-CF/B-31	On the left	Kitchen faucet/Bubbler	5.5 ug/L	469 ug/L
1-102-CF/B-32	On the right	Kitchen faucet/Bubbler	3.2 ug/L	196 ug/L

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Sample Number	Location	Description	Total Lead (ug/l)	Total Copper (ug/l)
2-HW-DWF-33	in the back across from room 201, next to girls restroom (left)	drinking water fountain	1.5 ug/L	154 ug/L
2-HW-DWF-34	in the back across from room 201, next to girls restroom (right)	drinking water fountain	<1.0 ug/L	68.7 ug/L
2-HW-DWF-35	Between telephone tech. and kitchen (left)	drinking water fountain	<1.0 ug/L	175 ug/L
2-HW-DWF-36	Between telephone tech. and kitchen (right)	drinking water fountain	<1.0 ug/L	126 ug/L
2-K-KS-37	Dish washing station (left)	kitchen faucet	1.5 ug/L	175 ug/L
2-K-KS-38	Dish washing station (middle)	kitchen faucet	1.5 ug/L	197 ug/L
2-K-KS-39	Dish washing station (right)	kitchen faucet	**34.8 ug/L**	259 ug/L
2-LR-DWF-40	In lunch room (left)	drinking water fountain	<1.0 ug/L	66.5 ug/L
2-LR-DWF-41	In lunch room (right)	drinking water fountain	<1.0 ug/L	134 ug/L
2-207-SRF-42	Across from kitchen	kitchen faucet	3.1 ug/L	227 ug/L
1-MHW-B-1	Across from room 103 bet. Rooms 102&104 (left)	Bubbler	2.5 ug/L	133 ug/L
1-MHW-B-2	Across from room 103 bet. Rooms 102&104 (right)	Bubbler	3.8 ug/L	102 ug/L
1-MHW-B-3	Across from room 105 & stairs to 2nd floor (left)	Bubbler	10.5 ug/L	390 ug/L
1-MHW-B-4	Across from room 105 & stairs to 2nd floor (right)	Bubbler	7.7 ug/L	152 ug/L

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Sample Number	Location	Description	Total Lead (ug/l)	Total Copper (ug/l)
1-MHW-B-5	By the main entry (left)	Bubbler	**59.0 ug/L**	759 ug/L
1-MHW-B-6	By the main entry (right)	Bubbler	**64.5 ug/L**	**1730 ug/L**
2-MHW-B-7	Between boys restroom & Storage (left)	Bubbler	**116 ug/L**	**2710 ug/L**
2-MHW-B-8	Between boys restroom & Storage (right)	Bubbler	**147 ug/L**	**1560 ug/L**
2-MHW-B-9	Across from room 208, bet. Rooms 207 &209 (left)	Bubbler	**156 ug/L**	**1430 ug/L**
2-MHW-B-10	Across from room 208, bet. Rooms 207 &209 (right)	Bubbler	**143 ug/L**	**1480 ug/L**
2-MHW-B-11	Next to staff room across from room 203	Bubbler	3.4 ug/L	40.8 ug/L
1-K-KS-13	in kitchen dish washing sink	kichen faucet	1.0 ug/L	131 ug/L
1-102-B-14	Room 102	Bubbler	10.9 ug/L	782 ug/L
1-104-B-15	Room 104	Bubbler	**21.6 ug/L**	448 ug/L
1-K-KS-43	Kitchen	Kitchen Sink	**20.6 ug/L**	232 ug/L
1-K-KS-44	Kitchen	Kitchen Sink	12.3 ug/L	325 ug/L

Key: NA - Not Analyzed

ug/L- micrograms per liter /parts per billion (ppb)

Analysis of samples of the right dishwashing station kitchen sink, both bubblers near the main entry (2), bubblers between boys restroom & storage (2), bubblers across from room 208, between rooms 207 &209 (2), bubbler in room 104 and kitchen sink (left) indicate that lead levels were above the MCL. Analysis of samples of the right bubbler near the main entry, bubblers

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between boys restroom & storage (2), bubblers across from room 208, between rooms 207 & 209 (2) indicate that copper levels were above the MCL. See recommendations below.

RECOMMENDATIONS

For drinking water fixtures that exceed the MCL after the initial sampling, ATC recommends the following:

1. Implement a plan in accordance with MDEQ Guidance on Drinking Water Sampling for Lead and Copper, April, 2016 Version2; OR
2. Remove fixture from service.
3. Implement a flush plan for fixtures that exceed the MCL of the initial sample according to MDEQ Guidance and the EPA's 3T's for Reducing Lead in Drinking Water in Schools.

LIMITATIONS

The sampling and analysis completed was: a preliminary screening for lead and copper only, to assess lead and copper concentrations (ug/L) at drinking water outlets in the school designated as high use by DPS, and may not be representative of all drinking water outlets within the school. If lead or copper concentrations were identified above their respective MCL's at any of the drinking water outlets tested, further review of the plumping system, fixtures affected, and testing may be completed to assess the source of the elevated levels of lead and/or copper, as well as, any other response actions deemed necessary by DPS.

Future drinking water evaluation and sampling in accordance with the recommendations may be predicated on applicable guidelines by the MDEQ or EPA and will be determined prior to developing a sampling plan for the school.

Sincerely,

ATC Group Services, LLC

Martin K. Gamble
Senior Project Manager

Robert C. Smith
Building Science Department Manager

Attachments

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Attachment A: Fixture Inventory Locations Map/Form
Attachment B: Fixture Inventory Photo Log
Attachment C: Laboratory Analytical Report

School Name: Marquette Elementary/Middle School

Address 6145 Canyon Street, Detroit, MI

Fixture Identification	Fixture Location	Fixture Description	Photo #
1-SR-SRF-1	Next to parent center in elementary school	Kitchen faucet	1
1-HW-DWF-2	Next to main entry on the left (left)	drinking water fountain- Not Working	2
1-HW-DWF-3	Next to main entry on the left (right)	drinking water fountain- Not Working	3
1-111-CF-4	In class next to the closet (PK)	Kitchen faucet	4
1-111-CF-5	on the left next to Bubbler (PK)	Kitchen faucet	5
1-111-B-6	Next to #5 (PK)	Bubbler	6
1-110-CF-9	on the right side (PK)	Kitchen faucet	9
1-110-CF-10	on the right next to bubbler (PK)	Kitchen faucet	10
1-110-B-11	Next to #10 (PK)	Bubbler	11
1-105-CF-14	On the left next to restrooms (PK)	Kitchen faucet	14
1-105-CF-15	On the left next to the Bubbler	Kitchen faucet	15

School Name: Marquette Elementary/Middle School

Address 6145 Canyon Street, Detroit, MI

Fixture Identification	Fixture Location	Fixture Description	Photo #
1-105-B-16	Next to #15 (PK)	Bubbler	16
1-108-CF-19	On the left next to the restrooms (K)	kitchen faucet	19
1-108-CF-20	On the right next to bubbler (K)	kitchen faucet	20
1-108-B-21	Next to # 20 (K)	Bubbler	21
1-107A-CF-24	On the right next to the restrooms (K)	Kitchen faucet	24
1-107A-CF-25	On the right next to bubbler (K)	kitchen faucet	25
1-107A-B-26	Next to # 25 (K)	Bubbler	26
1-109-CF/B-29	On the left	Kitchen faucet/Bubbler	29
1-104-CF/B-30	On the right	Kitchen faucet/Bubbler	30
1-103-CF/B-31	On the left	Kitchen faucet/Bubbler	31
1-102-CF/B-32	On the right	Kitchen faucet/Bubbler	32

School Name: Marquette Elementary/Middle School

Address 6145 Canyon Street, Detroit, MI

Fixture Identification	Fixture Location	Fixture Description	Photo #
2-HW-DWF-33	in the back across from room 201, next to girls restroom (left)	drinking water fountain	33
2-HW-DWF-34	in the back across from room 201, next to girls restroom (right)	drinking water fountain	34
2-HW-DWF-35	Between telephone tech. and kitchen (left)	drinking water fountain	35
2-HW-DWF-36	Between telephone tech. and kitchen (right)	drinking water fountain	36
2-K-KS-37	Dish washing station (left)	kitchen faucet	37
2-K-KS-38	Dish washing station (middle)	kitchen faucet	38
2-K-KS-39	Dish washing station (right)	kitchen faucet	39
2-LR-DWF-40	In lunch room (left)	drinking water fountain	40
2-LR-DWF-41	In lunch room (right)	drinking water fountain	41
2-207-SRF-42	Across from kitchen	kitchen faucet	42
1-K-KS-43	Kitchen	Kitchen Sink	43
1-K-KS-44	Kitchen	Kitchen Sink	44

School Name: Marquette Elementary/Middle School

Address 6145 Canyon Street, Detroit, MI

Fixture Identification	Fixture Location	Fixture Description	Photo #
1-MHW-B-1	Across from room 103 bet. Rooms 102&104 (left)	Bubbler	1
1-MHW-B-2	Across from room 103 bet. Rooms 102&104 (right)	Bubbler	2
1-MHW-B-3	Across from room 105 & stairs to 2nd floor (left)	Bubbler	3
1-MHW-B-4	Across from room 105 & stairs to 2nd floor (right)	Bubbler	4
1-MHW-B-5	By the main entry (left)	Bubbler	5
1-MHW-B-6	By the main entry (right)	Bubbler	6
2-MHW-B-7	Between boys restroom & Storage (left)	Bubbler	7
2-MHW-B-8	Between boys restroom & Storage (right)	Bubbler	8
2-MHW-B-9	Across from room 208, bet. Rooms 207 &209 (left)	Bubbler	9
2-MHW-B-10	Across from room 208, bet. Rooms 207 &209 (right)	Bubbler	10
2-MHW-B-11	Next to staff room across from room 203	Bubbler	11

1-K-KS-12	in kitchen	hand wash	12
1-K-KS-13	in kitchen dish washing sink	kichen faucet	13
1-102-B-14	Room 102	Bubbler	14
1-104-B-15	Room 104	Bubbler	15

Photo 1: Kitchen faucet, next to parent center in elementary school

Photo 2:Drinking water fountain located on 1st floor next to main entry on the left (left fixture)

Photo 3: Drinking water fountain located on 1st floor next to main entry on the left (right fixture)

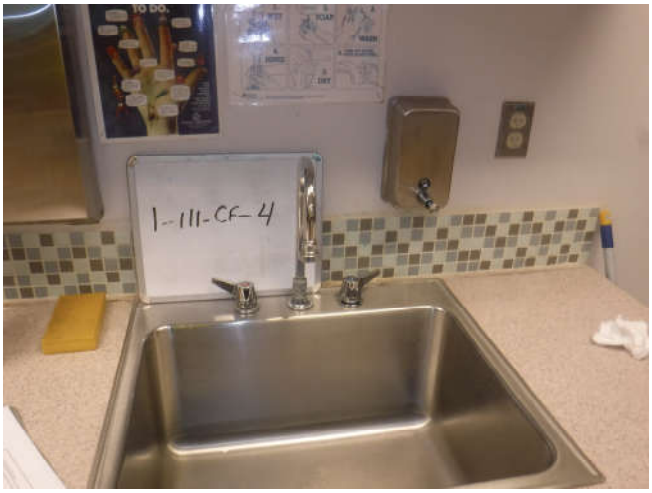

Photo 4:classroom faucet, located in class next to the closet (PK)

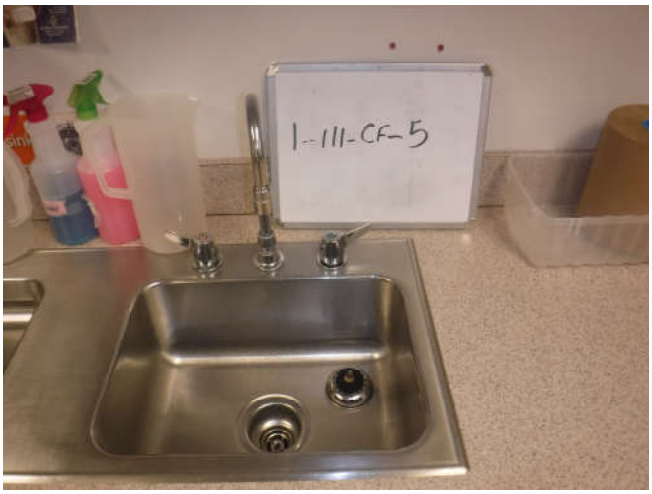

Photo 5: classroom faucet, on the left next to Bubbler (PK)

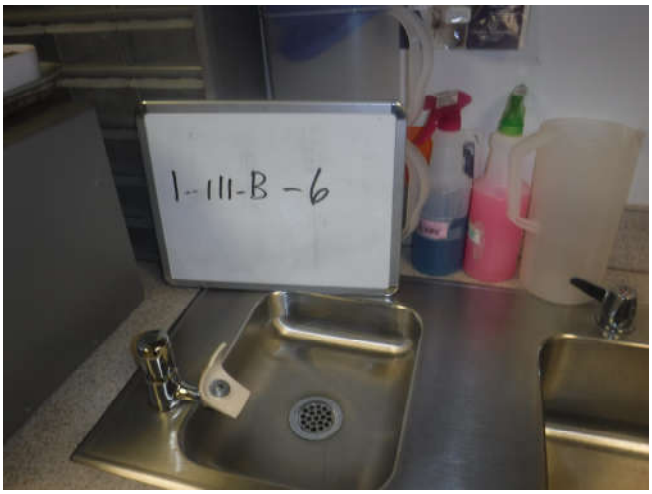

Photo 6:Bubbler, Next to #5 (PK)

Photo 9: classroom faucet, located in class on the right (PK)

Photo 10: classroom faucet, on the right next to bubbler (PK)

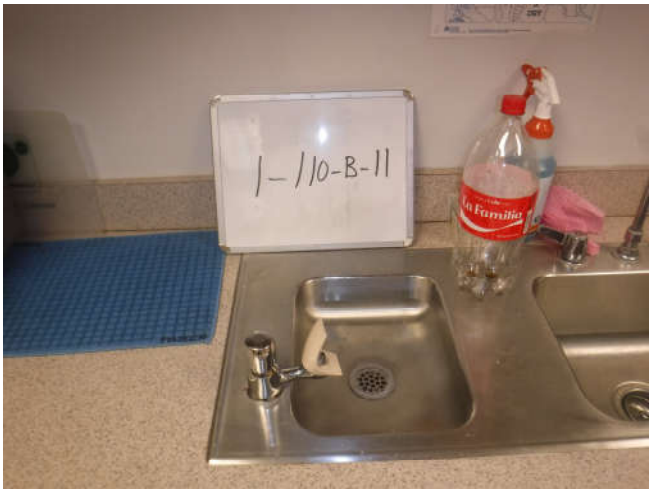

Photo 11:Bubbler, Next to #10 (PK)

Photo 14: classroom faucet, on the left next to restroom (PK)

Photo 15: classroom faucet, on the left next to bubbler (PK)

Photo 16:Bubbler, next to #15

Photo 19: Classroom faucet, on the right next to restrooms (Kindergarten)

Photo 20: Classroom faucet, on the right next to bubbler (Kindergarten)

Photo 21: Bubbler, next to #20 (kindergarten)

Photo 24: Classroom faucet, on the right next to restrooms (Kindergarten)

Photo 25: Classroom faucet, on the right next to bubbler (Kindergarten)

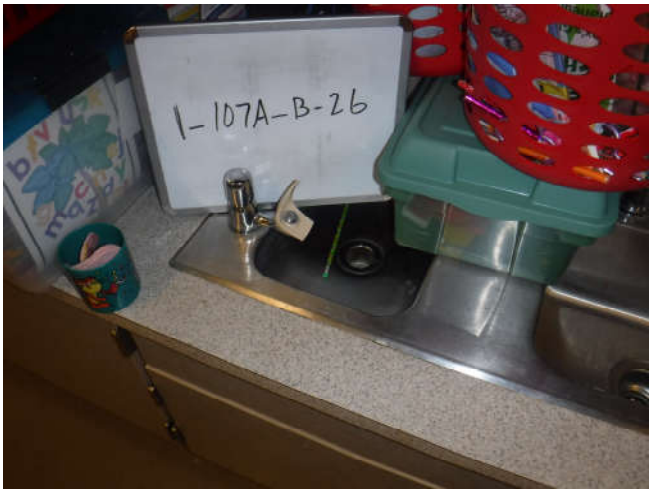

Photo 26: Bubbler, next to #25 (kindergarten)

Photo 29: Classroom faucet/Bubbler, on the left

Photo 30: Classroom faucet/Bubbler, on the right

Photo 31: Classroom faucet/Bubbler, on the left

Photo 32: Classroom faucet/Bubbler, on the right

Photo 33: Drinking water fountain, in the back across from room 201, next to girls restroom (left)

Photo 34: Drinking water fountain, in the back across from room 201, next to girls restroom (right)

Photo 26: Drinking water fountain, between telephone tech. and kitchen (left)

Photo 27: Drinking water fountain, between telephone tech. and kitchen (right)

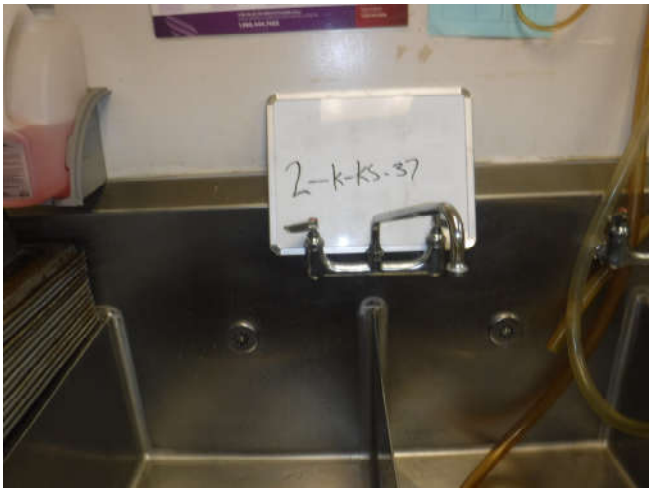

Photo 37: Kitchen faucet, Dish washing station (left)

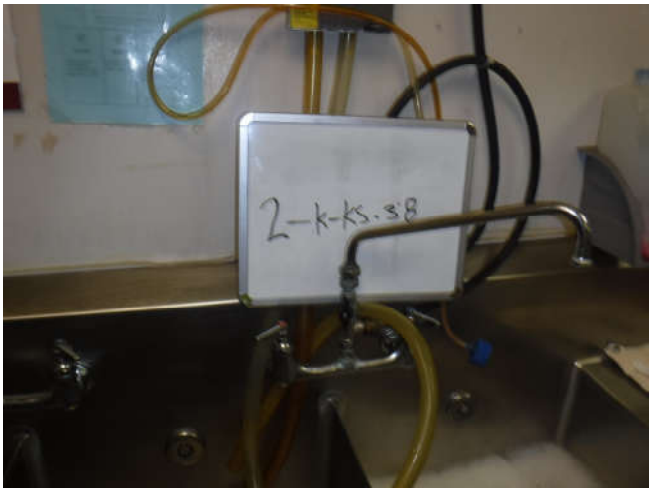

Photo 38: Kitchen faucet, Dish washing station (middle)

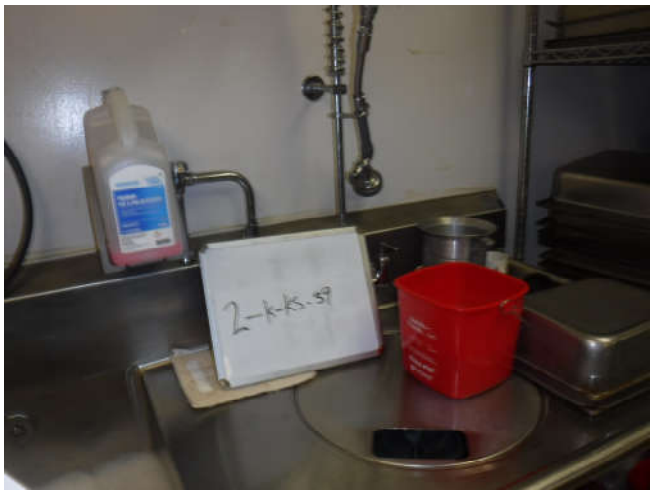

Photo 39: Kitchen faucet, Dish washing station (right)

Photo 40: Drinking water fountain, located in lunch room (left)

Photo 41: Drinking water fountain, located in lunch room (right)

Photo 42: Staff room faucet, across from kitchen

Photo1: Across from room 103 bet. Rooms 102&104 (left) (Middle School)

Photo1: Across from room 103 bet. Rooms 102&104 (right) (Middle School)

Photo 3: Across from room 105 & stairs to 2nd floor (left) (Middle School)

Photo 4: Across from room 105 & stairs to 2nd floor (right) (Middle School)

Photo 5: Bubbler, located in a 1st floor, by the main entry (left) (Middle School)

Photo 6: Bubbler, located in a 1st floor, by the main entry (right) (Middle School)

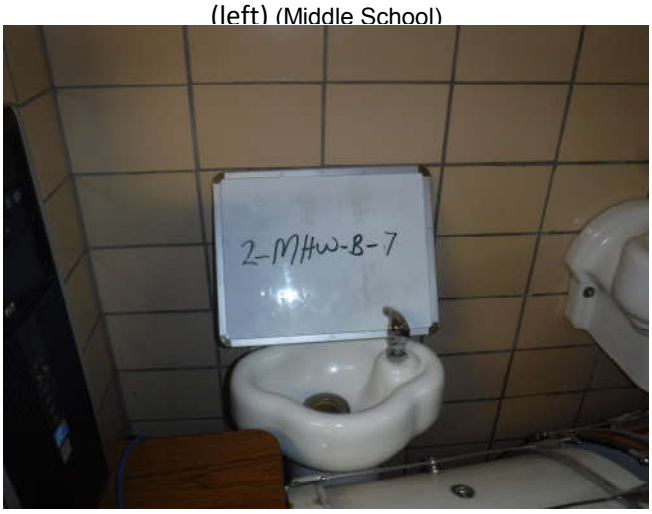

Photo 7: Bubbler, located in a 2nd floor, between boys restroom & Storage (left) (Middle School)

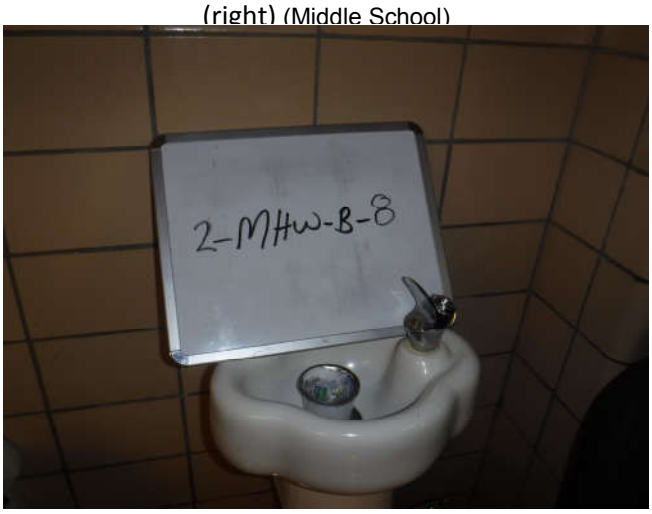

Photo 8: Bubbler, located in a 2nd floor, between boys restroom & Storage (right) (Middle School)

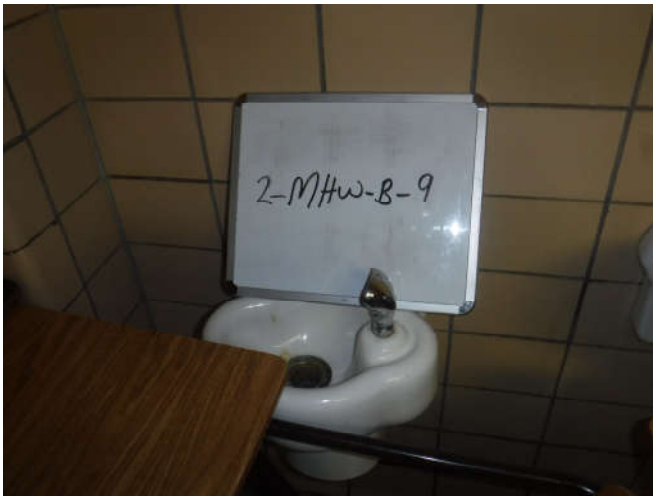

Photo 9: Bubbler, located in a 2nd floor, Across from room 208, bet. Rooms 207 &209 (left) (Middle School)

Photo 10: Bubbler, located in a 2nd floor, Across from room 208, bet. Rooms 207 &209 (right) (Middle School)

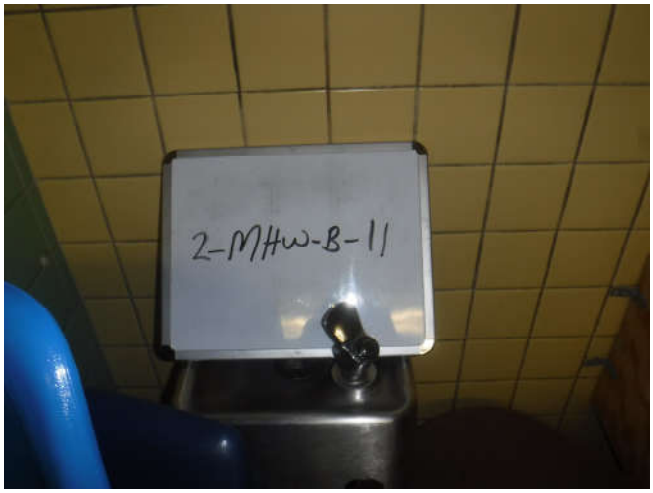

Photo 11: Bubbler, located in a 2nd floor Next to staff room across from room 203 (Middle School)

Photo 12: Hand wash Faucet, located on 2nd floor in kitchen (Middle School)

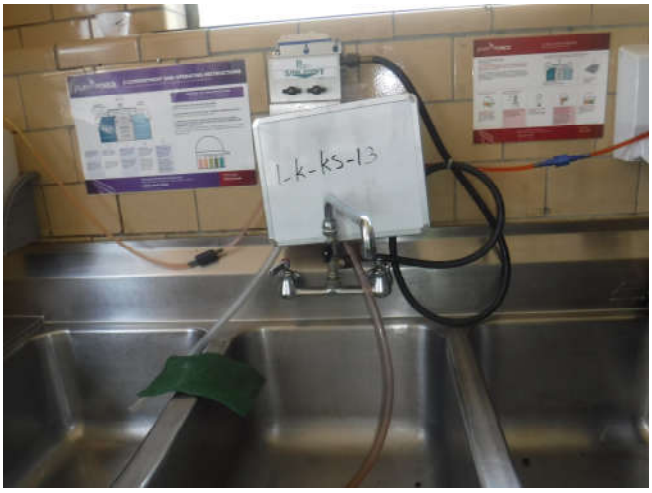

Photo13: kitchen Faucet, located on 2nd floor in kitchen dish washing sink (Middle School)

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

September 06, 2018

Robert Smith
ATC Group Services
46555 Humboldt
Suite 100
Novi, MI 48377

RE: Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Dear Robert Smith:
Enclosed are the analytical results for sample(s) received by the laboratory on August 23, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Cole
will.cole@pacelabs.com
(616)975-4500
Project Manager

Enclosures

cc: AP c/o Abigail Jardine, ATC Group Services
Michael Hauswirth, ATC Group Services

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

CERTIFICATIONS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Grand Rapids Certification ID's

5560 Corporate Exchange Ct SE, Grand Rapids, MI 49512
Minnesota Department of Health, Certificate #1385941
Arkansas Department of Environmental Quality, Certificate #18-046-0
Georgia Environmental Protection Division, Stipulation
Illinois Environmental Protection Agency, Certificate #004325
Michigan Department of Environmental Quality, Laboratory #0034
New York State Department of Health, Serial #57971 and 57972
North Carolina Division of Water Resources, Certificate #659
Virginia Department of General Services, Certificate #9780
Wisconsin Department of Natural Resources, Laboratory #999472650
U.S. Department of Agriculture Permit to Receive Soil, Permit #P330-17-00278

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

SAMPLE SUMMARY

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Lab ID	Sample ID	Matrix	Date Collected	Date Received
4616820001	**1-SR-SRF-1**	Drinking Water	08/09/18 09:16	08/23/18 19:45
4616820002	**1-111-B-6**	Drinking Water	08/09/18 09:26	08/23/18 19:45
4616820003	**1-110-B-11**	Drinking Water	08/09/18 09:28	08/23/18 19:45
4616820004	**1-105-B-16**	Drinking Water	08/09/18 09:30	08/23/18 19:45
4616820005	**1-108-B-21**	Drinking Water	08/09/18 09:32	08/23/18 19:45
4616820006	**1-107A-B-26**	Drinking Water	08/09/18 09:34	08/23/18 19:45
4616820007	**1-109-CF/B-29**	Drinking Water	08/09/18 09:36	08/23/18 19:45
4616820008	**1-104-CF/B-30**	Drinking Water	08/09/18 09:38	08/23/18 19:45
4616820009	**1-103-CF/B-31**	Drinking Water	08/09/18 09:40	08/23/18 19:45
4616820010	**1-102-CF/B-32**	Drinking Water	08/09/18 09:42	08/23/18 19:45
4616820011	**2-HW-DWF-33**	Drinking Water	08/09/18 09:44	08/23/18 19:45
4616820012	**2-HW-DWF-34**	Drinking Water	08/09/18 09:46	08/23/18 19:45
4616820013	**2-HW-DWF-35**	Drinking Water	08/09/18 09:50	08/23/18 19:45
4616820014	**2-HW-DWF-36**	Drinking Water	08/09/18 09:51	08/23/18 19:45
4616820015	**2-K-KS-37**	Drinking Water	08/09/18 09:55	08/23/18 19:45
4616820016	**2-K-KS-38**	Drinking Water	08/09/18 09:56	08/23/18 19:45
4616820017	**2-K-KS-39**	Drinking Water	08/09/18 09:57	08/23/18 19:45
4616820018	**2-LR-DWF-40**	Drinking Water	08/09/18 09:59	08/23/18 19:45
4616820019	**2-LR-DWF-41**	Drinking Water	08/09/18 10:00	08/23/18 19:45
4616820020	**2-207-SRF-42**	Drinking Water	08/09/18 10:02	08/23/18 19:45
4616820021	**1-MHW-B-1**	Drinking Water	08/09/18 10:10	08/23/18 19:45
4616820022	**1-MHW-B-2**	Drinking Water	08/09/18 10:11	08/23/18 19:45
4616820023	**1-MHW-B-3**	Drinking Water	08/09/18 10:12	08/23/18 19:45
4616820024	**1-MHW-B-4**	Drinking Water	08/09/18 10:15	08/23/18 19:45
4616820025	**1-MHW-B-5**	Drinking Water	08/09/18 10:16	08/23/18 19:45
4616820026	**1-MHW-B-6**	Drinking Water	08/09/18 10:18	08/23/18 19:45
4616820027	**2-MHW-B-7**	Drinking Water	08/09/18 10:20	08/23/18 19:45
4616820028	**2-MHW-B-8**	Drinking Water	08/09/18 10:22	08/23/18 19:45
4616820029	**2-MHW-B-9**	Drinking Water	08/09/18 10:24	08/23/18 19:45
4616820030	**2-MHW-B-10**	Drinking Water	08/09/18 10:26	08/23/18 19:45
4616820031	**2-MHW-B-11**	Drinking Water	08/09/18 10:30	08/23/18 19:45
4616820032	**1-K-KS-13**	Drinking Water	08/09/18 10:33	08/23/18 19:45
4616820033	**1-102-B-14**	Drinking Water	08/09/18 09:24	08/23/18 19:45
4616820034	**1-104-B-15**	Drinking Water	08/09/18 09:25	08/23/18 19:45
4616820035	**1-K-KS-43**	Drinking Water	08/09/18 10:40	08/23/18 19:45
4616820036	**1-K-KS-44**	Drinking Water	08/09/18 10:41	08/23/18 19:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Lab ID	Sample ID	Method	Analysts	Analytes Reported
4616820001	**1-SR-SRF-1**	EPA 200.8	CKD	2
4616820002	**1-111-B-6**	EPA 200.8	CKD	2
4616820003	**1-110-B-11**	EPA 200.8	CKD	2
4616820004	**1-105-B-16**	EPA 200.8	CKD	2
4616820005	**1-108-B-21**	EPA 200.8	CKD	2
4616820006	**1-107A-B-26**	EPA 200.8	CKD	2
4616820007	**1-109-CF/B-29**	EPA 200.8	CKD	2
4616820008	**1-104-CF/B-30**	EPA 200.8	NHAM	2
4616820009	**1-103-CF/B-31**	EPA 200.8	NHAM	2
4616820010	**1-102-CF/B-32**	EPA 200.8	NHAM	2
4616820011	**2-HW-DWF-33**	EPA 200.8	NHAM	2
4616820012	**2-HW-DWF-34**	EPA 200.8	NHAM	2
4616820013	**2-HW-DWF-35**	EPA 200.8	NHAM	2
4616820014	**2-HW-DWF-36**	EPA 200.8	NHAM	2
4616820015	**2-K-KS-37**	EPA 200.8	NHAM	2
4616820016	**2-K-KS-38**	EPA 200.8	NHAM	2
4616820017	**2-K-KS-39**	EPA 200.8	NHAM	2
4616820018	**2-LR-DWF-40**	EPA 200.8	NHAM	2
4616820019	**2-LR-DWF-41**	EPA 200.8	NHAM	2
4616820020	**2-207-SRF-42**	EPA 200.8	NHAM	2
4616820021	**1-MHW-B-1**	EPA 200.8	NHAM	2
4616820022	**1-MHW-B-2**	EPA 200.8	NHAM	2
4616820023	**1-MHW-B-3**	EPA 200.8	NHAM	2
4616820024	**1-MHW-B-4**	EPA 200.8	NHAM	2
4616820025	**1-MHW-B-5**	EPA 200.8	NHAM	2
4616820026	**1-MHW-B-6**	EPA 200.8	NHAM	2
4616820027	**2-MHW-B-7**	EPA 200.8	NHAM	2
4616820028	**2-MHW-B-8**	EPA 200.8	NHAM	2
4616820029	**2-MHW-B-9**	EPA 200.8	NHAM	2
4616820030	**2-MHW-B-10**	EPA 200.8	NHAM	2
4616820031	**2-MHW-B-11**	EPA 200.8	NHAM	2
4616820032	**1-K-KS-13**	EPA 200.8	NHAM	2
4616820033	**1-102-B-14**	EPA 200.8	NHAM	2
4616820034	**1-104-B-15**	EPA 200.8	NHAM	2
4616820035	**1-K-KS-43**	EPA 200.8	NHAM	2
4616820036	**1-K-KS-44**	EPA 200.8	NHAM	2

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 1-SR-SRF-1 **Lab ID: 4616820001** Collected: 08/09/18 09:16 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**205**	ug/L	1.0	1300	1		09/05/18 14:26	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		09/05/18 14:26	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 1-111-B-6 **Lab ID: 4616820002** Collected: 08/09/18 09:26 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**118**	ug/L	1.0	1300	1		09/05/18 14:27	7440-50-8	
Lead	**3.8**	ug/L	1.0	15	1		09/05/18 14:27	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 1-110-B-11 **Lab ID: 4616820003** Collected: 08/09/18 09:28 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**139**	ug/L	1.0	1300	1		09/05/18 14:28	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		09/05/18 14:28	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 1-105-B-16 **Lab ID: 4616820004** Collected: 08/09/18 09:30 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**193**	ug/L	1.0	1300	1		09/05/18 14:29	7440-50-8	
Lead	**6.7**	ug/L	1.0	15	1		09/05/18 14:29	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 1-108-B-21 **Lab ID: 4616820005** Collected: 08/09/18 09:32 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**345**	ug/L	5.0	1300	5		09/05/18 16:53	7440-50-8	
Lead	**1.4**	ug/L	1.0	15	1		09/05/18 14:30	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 1-107A-B-26 **Lab ID: 4616820006** Collected: 08/09/18 09:34 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**228**	ug/L	1.0	1300	1		09/05/18 15:40	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		09/05/18 15:40	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 1-109-CF/B-29 **Lab ID: 4616820007** Collected: 08/09/18 09:36 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**141**	ug/L	1.0	1300	1		09/05/18 15:41	7440-50-8	
Lead	**2.9**	ug/L	1.0	15	1		09/05/18 15:41	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 1-104-CF/B-30 **Lab ID: 4616820008** Collected: 08/09/18 09:38 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**221**	ug/L	1.0	1300	1		09/05/18 12:18	7440-50-8	
Lead	**1.6**	ug/L	1.0	15	1		09/05/18 12:18	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 1-103-CF/B-31 **Lab ID: 4616820009** Collected: 08/09/18 09:40 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**469**	ug/L	5.0	1300	5		09/05/18 14:43	7440-50-8	
Lead	**5.5**	ug/L	1.0	15	1		09/05/18 12:22	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 1-102-CF/B-32 **Lab ID: 4616820010** Collected: 08/09/18 09:42 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**196**	ug/L	1.0	1300	1		09/05/18 12:23	7440-50-8	
Lead	**3.2**	ug/L	1.0	15	1		09/05/18 12:23	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 2-HW-DWF-33 **Lab ID: 4616820011** Collected: 08/09/18 09:44 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**154**	ug/L	1.0	1300	1		09/05/18 12:24	7440-50-8	
Lead	**1.5**	ug/L	1.0	15	1		09/05/18 12:24	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 2-HW-DWF-34 **Lab ID: 4616820012** Collected: 08/09/18 09:46 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**68.7**	ug/L	1.0	1300	1		09/05/18 12:25	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		09/05/18 12:25	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 2-HW-DWF-35 **Lab ID: 4616820013** Collected: 08/09/18 09:50 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**175**	ug/L	1.0	1300	1		09/05/18 12:29	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		09/05/18 12:29	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 2-HW-DWF-36 **Lab ID: 4616820014** Collected: 08/09/18 09:51 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**126**	ug/L	1.0	1300	1		09/05/18 12:30	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		09/05/18 12:30	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 2-K-KS-37 **Lab ID: 4616820015** Collected: 08/09/18 09:55 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**175**	ug/L	1.0	1300	1		09/05/18 12:31	7440-50-8	
Lead	**1.5**	ug/L	1.0	15	1		09/05/18 12:31	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 2-K-KS-38 **Lab ID: 4616820016** Collected: 08/09/18 09:56 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**197**	ug/L	1.0	1300	1		09/05/18 12:32	7440-50-8	
Lead	**1.5**	ug/L	1.0	15	1		09/05/18 12:32	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 2-K-KS-39 **Lab ID: 4616820017** Collected: 08/09/18 09:57 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**259**	ug/L	1.0	1300	1		09/05/18 12:33	7440-50-8	
Lead	**34.8**	ug/L	1.0	15	1		09/05/18 12:33	7439-92-1	

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 2-LR-DWF-40 **Lab ID: 4616820018** Collected: 08/09/18 09:59 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**66.5**	ug/L	1.0	1300	1		09/05/18 12:34	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		09/05/18 12:34	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 2-LR-DWF-41 **Lab ID: 4616820019** Collected: 08/09/18 10:00 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**134**	ug/L	1.0	1300	1		09/05/18 12:38	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		09/05/18 12:38	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 2-207-SRF-42 **Lab ID: 4616820020** Collected: 08/09/18 10:02 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**227**	ug/L	1.0	1300	1		09/05/18 12:42	7440-50-8	
Lead	**3.1**	ug/L	1.0	15	1		09/05/18 12:42	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 1-MHW-B-1 **Lab ID: 4616820021** Collected: 08/09/18 10:10 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**133**	ug/L	1.0	1300	1		09/05/18 12:43	7440-50-8	
Lead	**2.5**	ug/L	1.0	15	1		09/05/18 12:43	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 1-MHW-B-2 **Lab ID: 4616820022** Collected: 08/09/18 10:11 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**102**	ug/L	1.0	1300	1		09/05/18 12:44	7440-50-8	
Lead	**3.8**	ug/L	1.0	15	1		09/05/18 12:44	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 1-MHW-B-3 **Lab ID: 4616820023** Collected: 08/09/18 10:12 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**390**	ug/L	5.0	1300	5		09/05/18 14:44	7440-50-8	
Lead	**10.5**	ug/L	1.0	15	1		09/05/18 12:45	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 1-MHW-B-4 **Lab ID: 4616820024** Collected: 08/09/18 10:15 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**152**	ug/L	1.0	1300	1		09/05/18 12:46	7440-50-8	
Lead	**7.7**	ug/L	1.0	15	1		09/05/18 12:46	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 1-MHW-B-5 **Lab ID: 4616820025** Collected: 08/09/18 10:16 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**759**	ug/L	10.0	1300	10		09/05/18 14:45	7440-50-8	
Lead	**59.0**	ug/L	1.0	15	1		09/05/18 12:47	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 1-MHW-B-6 **Lab ID: 4616820026** Collected: 08/09/18 10:18 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**1730**	ug/L	50.0	1300	50		09/05/18 14:47	7440-50-8	
Lead	**64.5**	ug/L	1.0	15	1		09/05/18 12:48	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 2-MHW-B-7 **Lab ID: 4616820027** Collected: 08/09/18 10:20 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**2710**	ug/L	50.0	1300	50		09/05/18 14:48	7440-50-8	
Lead	**116**	ug/L	5.0	15	5		09/05/18 14:49	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 2-MHW-B-8 **Lab ID: 4616820028** Collected: 08/09/18 10:22 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**1560**	ug/L	50.0	1300	50		09/05/18 14:50	7440-50-8	
Lead	**147**	ug/L	5.0	15	5		09/05/18 14:57	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 2-MHW-B-9 **Lab ID: 4616820029** Collected: 08/09/18 10:24 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**1430**	ug/L	50.0	1300	50		09/05/18 15:01	7440-50-8	
Lead	**156**	ug/L	5.0	15	5		09/05/18 15:02	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 2-MHW-B-10 **Lab ID: 4616820030** Collected: 08/09/18 10:26 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**1480**	ug/L	50.0	1300	50		09/05/18 15:03	7440-50-8	
Lead	**143**	ug/L	5.0	15	5		09/05/18 15:04	7439-92-1	

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 2-MHW-B-11 **Lab ID: 4616820031** Collected: 08/09/18 10:30 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**40.8**	ug/L	1.0	1300	1		09/05/18 13:02	7440-50-8	
Lead	**3.4**	ug/L	1.0	15	1		09/05/18 13:02	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 1-K-KS-13 **Lab ID: 4616820032** Collected: 08/09/18 10:33 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**131**	ug/L	1.0	1300	1		09/05/18 13:03	7440-50-8	
Lead	**1.0**	ug/L	1.0	15	1		09/05/18 13:03	7439-92-1	

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 1-102-B-14 **Lab ID: 4616820033** Collected: 08/09/18 09:24 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**782**	ug/L	10.0	1300	10		09/05/18 15:11	7440-50-8	
Lead	**10.9**	ug/L	1.0	15	1		09/05/18 13:04	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 1-104-B-15 **Lab ID: 4616820034** Collected: 08/09/18 09:25 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**448**	ug/L	5.0	1300	5		09/05/18 15:12	7440-50-8	
Lead	**21.6**	ug/L	1.0	15	1		09/05/18 13:05	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 1-K-KS-43 **Lab ID: 4616820035** Collected: 08/09/18 10:40 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**232**	ug/L	1.0	1300	1		09/05/18 13:09	7440-50-8	
Lead	**20.6**	ug/L	1.0	15	1		09/05/18 13:09	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

ANALYTICAL RESULTS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Sample: 1-K-KS-44 **Lab ID: 4616820036** Collected: 08/09/18 10:41 Received: 08/23/18 19:45 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**325**	ug/L	5.0	1300	5		09/05/18 15:13	7440-50-8	
Lead	**12.3**	ug/L	1.0	15	1		09/05/18 13:10	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

QUALITY CONTROL DATA

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

QC Batch: 32423 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: ICPMS Metals, No Prep
Associated Lab Samples: 4616820001, 4616820002, 4616820003, 4616820004, 4616820005, 4616820006, 4616820007

METHOD BLANK: 130804 Matrix: Water
Associated Lab Samples: 4616820001, 4616820002, 4616820003, 4616820004, 4616820005, 4616820006, 4616820007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	<1.0	1.0	09/05/18 13:55	
Lead	ug/L	<1.0	1.0	09/05/18 13:55	

LABORATORY CONTROL SAMPLE: 130805

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	20	20.5	103	85-115	
Lead	ug/L	20	20.4	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 130806 130807

Parameter	Units	4616807014 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	15.7	20	20	35.4	35.7	99	100	70-130	1	20	
Lead	ug/L	8.5	20	20	30.3	30.2	109	109	70-130	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 130809 130810

Parameter	Units	4616807024 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	27.0	20	20	46.3	45.8	97	94	70-130	1	20	
Lead	ug/L	5.5	20	20	27.1	27.4	108	109	70-130	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

QUALITY CONTROL DATA

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

QC Batch: 32424 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: ICPMS Metals, No Prep
Associated Lab Samples: 4616820008, 4616820009, 4616820010, 4616820011, 4616820012, 4616820013, 4616820014, 4616820015, 4616820016, 4616820017, 4616820018, 4616820019, 4616820020, 4616820021, 4616820022, 4616820023, 4616820024, 4616820025, 4616820026, 4616820027

METHOD BLANK: 130814 Matrix: Water
Associated Lab Samples: 4616820008, 4616820009, 4616820010, 4616820011, 4616820012, 4616820013, 4616820014, 4616820015, 4616820016, 4616820017, 4616820018, 4616820019, 4616820020, 4616820021, 4616820022, 4616820023, 4616820024, 4616820025, 4616820026, 4616820027

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	<1.0	1.0	09/05/18 12:16	
Lead	ug/L	<1.0	1.0	09/05/18 12:16	

LABORATORY CONTROL SAMPLE: 130815

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	20	20.8	104	85-115	
Lead	ug/L	20	21.4	107	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 130816 130817

Parameter	Units	4616820008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	221	20	20	238	243	83	110	70-130	2	20	
Lead	ug/L	1.6	20	20	22.6	22.3	105	104	70-130	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 130819 130820

Parameter	Units	4616820018 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	66.5	20	20	87.9	88.6	107	111	70-130	1	20	
Lead	ug/L	<1.0	20	20	22.3	22.1	108	107	70-130	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

QUALITY CONTROL DATA

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

QC Batch: 32426 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: ICPMS Metals, No Prep
Associated Lab Samples: 4616820028, 4616820029, 4616820030, 4616820031, 4616820032, 4616820033, 4616820034, 4616820035, 4616820036

METHOD BLANK: 130826 Matrix: Water
Associated Lab Samples: 4616820028, 4616820029, 4616820030, 4616820031, 4616820032, 4616820033, 4616820034, 4616820035, 4616820036

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	<1.0	1.0	09/05/18 12:50	
Lead	ug/L	<1.0	1.0	09/05/18 12:50	

LABORATORY CONTROL SAMPLE: 130827

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	20	22.0	110	85-115	
Lead	ug/L	20	21.7	109	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 130828 130829

Parameter	Units	4616820028 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	1560	1000	1000	2670	2530	111	97	70-130	5	20	
Lead	ug/L	147	100	100	254	255	107	108	70-130	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 130831 130832

Parameter	Units	4616822002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	28.8	20	20	49.5	52.0	104	116	70-130	5	20	
Lead	ug/L	1.7	20	20	23.8	23.3	110	108	70-130	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

QUALIFIERS

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: DW-Marquette Elementary/Middle
Pace Project No.: 4616820

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4616820001	**1-SR-SRF-1**	EPA 200.8	32423		
4616820002	**1-111-B-6**	EPA 200.8	32423		
4616820003	**1-110-B-11**	EPA 200.8	32423		
4616820004	**1-105-B-16**	EPA 200.8	32423		
4616820005	**1-108-B-21**	EPA 200.8	32423		
4616820006	**1-107A-B-26**	EPA 200.8	32423		
4616820007	**1-109-CF/B-29**	EPA 200.8	32423		
4616820008	**1-104-CF/B-30**	EPA 200.8	32424		
4616820009	**1-103-CF/B-31**	EPA 200.8	32424		
4616820010	**1-102-CF/B-32**	EPA 200.8	32424		
4616820011	**2-HW-DWF-33**	EPA 200.8	32424		
4616820012	**2-HW-DWF-34**	EPA 200.8	32424		
4616820013	**2-HW-DWF-35**	EPA 200.8	32424		
4616820014	**2-HW-DWF-36**	EPA 200.8	32424		
4616820015	**2-K-KS-37**	EPA 200.8	32424		
4616820016	**2-K-KS-38**	EPA 200.8	32424		
4616820017	**2-K-KS-39**	EPA 200.8	32424		
4616820018	**2-LR-DWF-40**	EPA 200.8	32424		
4616820019	**2-LR-DWF-41**	EPA 200.8	32424		
4616820020	**2-207-SRF-42**	EPA 200.8	32424		
4616820021	**1-MHW-B-1**	EPA 200.8	32424		
4616820022	**1-MHW-B-2**	EPA 200.8	32424		
4616820023	**1-MHW-B-3**	EPA 200.8	32424		
4616820024	**1-MHW-B-4**	EPA 200.8	32424		
4616820025	**1-MHW-B-5**	EPA 200.8	32424		
4616820026	**1-MHW-B-6**	EPA 200.8	32424		
4616820027	**2-MHW-B-7**	EPA 200.8	32424		
4616820028	**2-MHW-B-8**	EPA 200.8	32426		
4616820029	**2-MHW-B-9**	EPA 200.8	32426		
4616820030	**2-MHW-B-10**	EPA 200.8	32426		
4616820031	**2-MHW-B-11**	EPA 200.8	32426		
4616820032	**1-K-KS-13**	EPA 200.8	32426		
4616820033	**1-102-B-14**	EPA 200.8	32426		
4616820034	**1-104-B-15**	EPA 200.8	32426		
4616820035	**1-K-KS-43**	EPA 200.8	32426		
4616820036	**1-K-KS-44**	EPA 200.8	32426		

REPORT OF LABORATORY ANALYSIS

WO# : 4616820

4616820

CHAIN-OF-CUSTODY / Analytical Request Document #19876

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 4

Required Client Information:

Company:	ATC Group Services LLC
Address:	46555 Humboldt Drive, Suite 100
	Novi, MI 48377
Email:	robert.smith@atcgs.com
Phone:	248-669-5140 Fax: 248-669-5147
Requested Due Date:	

Required Project Information:

Report To:	Robert Smith
Copy To:	
Purchase Order #:	
Project Name:	Lead & Copper Testing
Project #:	Marquette Elementary/ Middle

Section C Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	Will Cole
Pace Profile #:	Profile 236 - Line 2

Regulatory Agency

State / Location: MI

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N)	Analyses Test: Lead & Copper	Residual Chlorine (Y/N)
																		Y/N		(19-2)
1	1-SR-SRF-1	DW	G	8/9/18	9:16				1			X							X	
2	#2 Not Used																			
3	#3 Not Used																			
4	1-111-B-6	DW	G	8/9/18	9:26				1			X							X	
5	1-110-B-11	DW	G	8/9/18	9:28				1			X							X	
6	1-105-B-16	DW	G	8/9/18	9:30				1			X							X	
7	1-108-B-21	DW	G	8/9/18	9:32				1			X							X	
8	1-107A-B-26	DW	G	8/9/18	9:34				1			X							X	
9	1-109-CF/B-29	DW	G	8/9/18	9:36				1			X							X	
10	1-104-CF/B-30	DW	G	8/9/18	9:38				1			X							X	
11	1-103-CF/B-31	DW	G	8/9/18	9:40				1			X							X	
12	1-102-CF/B-32	DW	G	8/9/18	9:42				1			X							X	

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Dmm	8-23-18	1945	D. Nardin	8-23-18	1522	
					8-23-18	1945	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Dominique Greer

SIGNATURE of SAMPLER:

DATE Signed: 8/9/2018

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document #19877

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A — Required Client Information:

Company:	ATC Group Services LLC
Address:	46555 Humboldt Drive, Suite 100
	Novi, MI 48377
Email:	robert.smith@atcgs.com
Phone:	248-669-5140 — Fax: 248-669-5147
Requested Due Date:	

Section B — Required Project Information:

Report To:	Robert Smith
Copy To:	
Purchase Order #:	
Project Name:	Lead & Copper Testing
Project #:	Marquette Elementary/ Middle

Section C — Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	Will Cole
Pace Profile #:	Profile 236 - Line 2

Regulatory Agency
State / Location
MI

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	Collected Start DATE	Collected Start TIME	Collected End DATE	Collected End TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Lead & Copper	Residual Chlorine (Y/N)
13	2-HW-DWF-33	DW	G	8/9/18	9:44				1			X							X	
14	2-HW-DWF-34	DW	G	8/9/18	9:46				1			X							X	
15	2-HW-DWF-35	DW	G	8/9/18	9:50				1			X							X	
16	2-HW-DWF-36	DW	G	8/9/18	9:51				1			X							X	
17	2-K-KS-37	DW	G	8/9/18	9:55				1			X							X	
18	2-K-KS-38	DW	G	8/9/18	9:56				1			X							X	
19	2-K-KS-39	DW	G	8/9/18	9:57				1			X							X	
20	2-LR-DWF-40	DW	G	8/9/18	9:59				1			X							X	
21	2-LR-DWF-41	DW	G	8/9/18	10:00				1			X							X	
22	2-207-SRF-42	DW	G	8/9/18	10:02				1			X							X	
23	1-MHW-B-1	DW	G	8/9/18	10:10				1			X							X	
24	1-MHW-B-2	DW	G	8/9/18	10:11				1			X							X	

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
				D[illegible]	8-23-18	1522
	D[illegible]	8-23-18	1945	J. Nardin	8-23-18	1945

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Dominique Greer

SIGNATURE of SAMPLER: [signature] — DATE Signed: 8/9/2018

SAMPLE CONDITIONS			
TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document #19878

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A
Required Client Information:

Company:	ATC Group Services LLC
Address:	46555 Humboldt Drive, Suite 100
	Novi, MI 48377
Email:	robert.smith@atcgs.com
Phone:	248-669-5140 Fax: 248-669-5147
Requested Due Date:	

Section B
Required Project Information:

Report To:	Robert Smith
Copy To:	
Purchase Order #:	
Project Name:	Lead & Copper Testing
Project #:	Marquette Elementary/ Middle

Section C
Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	Will Cole
Pace Profile #:	Profile 236 - Line 2

Regulatory Agency	
State / Location	MI

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analyses Test: Lead & Copper	Residual Chlorine (Y/N)
25	1-MHW-B-3	DW	G	8/9/18	10:12				1			X							X	
26	1-MHW-B-4	DW	G	8/9/18	10:15				1			X							X	
27	1-MHW-B-5	DW	G	8/9/18	10:16				1			X							X	
28	1-MHW-B-6	DW	G	8/9/18	10:18				1			X							X	
29	2-MHW-B-7	DW	G	8/9/18	10:20				1			X							X	
30	2-MHW-B-8	DW	G	8/9/18	10:22				1			X							X	
31	2-MHW-B-9	DW	G	8/9/18	10:24				1			X							X	
32	2-MHW-B-10	DW	G	8/9/18	10:26				1			X							X	
33	2-MHW-B-11	DW	G	8/9/18	10:30				1			X							X	
34	1-K-KS-13	DW	G	8/9/18	10:33				1			X							X	
35	1-102-B-14	DW	G	8/9/18	9:24				1			X							X	
36	1-104-B-15	DW	G	8/9/18	9:25				1			X							X	

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Dmc	8-23-18		D. Mardin	8-23-18	1522	
					8-23-18	1945	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Dominique Greer

SIGNATURE of SAMPLER: [signature] DATE Signed: 8/9/2018

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document #19879

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 4 Of 4

Section A
Required Client Information:

Company:	ATC Group Services LLC
Address:	46555 Humboldt Drive, Suite 100
Novi, MI 48377	
Email:	robert.smith@atcgs.com
Phone:	248-669-5140 Fax: 248-669-5147
Requested Due Date:	

Section B
Required Project Information:

Report To:	Robert Smith
Copy To:	
Purchase Order #:	
Project Name:	Lead & Copper Testing
Project #:	Marquette Elementary/ Middle

Section C
Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	Will Cole
Pace Profile #:	Profile 236 - Line 2

Regulatory Agency
State / Location
MI

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Lead & Copper	Residual Chlorine (Y/N)
37	1-K-KS-43	DW	G	8/9/18	10:40				1			X							X	
38	1-K-KS-44	DW	G	8/9/18	10:41				1			X							X	

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Dmmk	8-23-18	1945	Dmmk	8-23-18	1522	
				[illegible]	8-23-18	1945	

SAMPLER NAME AND SAMPLE SIGNATURE

PRINT Name of SAMPLER: Dominique Greer

SIGNATURE of SAMPLER: [signature] DATE Signed: 8/9/2018

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLE RECEIVING / LOG-IN CHECKLIST

Pace Analytical®

Client: QTC	Work Order #: 4616820
Receipt Record Page/Line #: 19-2	001-036

Recorded by (initials/date)		Qty Received	Thermometer Used
SN 8-24-18 CN	☑ Cooler ☐ Box ☐ Other	1	☑ IR Gun (#202) ☐ Digital Thermometer (#54) ☐ IR Gun (#402)

	Cooler 1	Cooler 2	Cooler 3	Cooler 4
Cooler # / Time	00047 / 1226			
Custody Seals	☑ None ☐ Present / Intact ☐ Present / Not Intact	☐ None ☐ Present / Intact ☐ Present / Not Intact	☐ None ☐ Present / Intact ☐ Present / Not Intact	☐ None ☐ Present / Intact ☐ Present / Not Intact
Coolant Type	☐ Loose Ice ☐ Bagged Ice ☐ Blue Ice ☑ None	☐ Loose Ice ☐ Bagged Ice ☐ Blue Ice ☐ None	☐ Loose Ice ☐ Bagged Ice ☐ Blue Ice ☐ None	☐ Loose Ice ☐ Bagged Ice ☐ Blue Ice ☐ None
Coolant Location	Dispersed / Top / Middle / Bottom	Dispersed / Top / Middle / Bottom	Dispersed / Top / Middle / Bottom	Dispersed / Top / Middle / Bottom
Temp Blank Present	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
If Present, Temperature Blank Location is	☐ Representative ☐ Not Representative	☐ Representative ☐ Not Representative	☐ Representative ☐ Not Representative	☐ Representative ☐ Not Representative

Cooler 1:

	Observed °C	Correction Factor °C	Actual °C
Temp Blank:			
Sample 1:		0	24.6
Sample 2:		0	24.4
Sample 3:		0	24.6

When above 6 °C take a 3 Sample Average °C: 24.5

☐ VOC Trip Blank received?

Coolers 2–4:

	Observed °C	Correction Factor °C	Actual °C
Temp Blank:			
Sample 1:			
Sample 2:			
Sample 3:			

When above 6 °C take a 3 Sample Average °C:

☐ VOC Trip Blank received?

If any shaded areas checked, complete Sample Receiving Non-Conformance

Paperwork Received

Yes	No	
☑	☐	Chain of Custody record(s)? If No, Initiated By ______
☑		Received for Lab Signed/Date/Time?
☐	☑	USDA Soil Documents?
☐	☑	Sampling / Field Forms?
☐	☑	Other ______

COC Information

☑ Pace COC ☐ Other ______

COC ID Numbers: 19876, 19877, 19878, 19879

Check COC for Accuracy

Yes	No	
☑	☐	Analysis Requested?
☑	☐	Sample ID matches COC?
☑	☐	Sample Date and Time matches COC?
☑	☐	All containers indicated are received?

Sample Condition Summary

N/A	Yes	No	
	☐	☑	Broken containers/lids?
	☐	☑	Missing or incomplete labels?
	☐	☑	Illegible information on labels?
	☐	☑	Low volume received?
	☐	☑	Inappropriate or non-Pace containers received?
☑	☐	☐	VOC vials have headspace?
	☐	☑	Extra sample locations?
	☐	☑	Containers not listed on COC?

Check Sample Preservation

N/A	Yes	No	
	☑	☐	Temperature Blank **OR** average sample temperature, ≥6° C?
☐	☐	☑	If "Yes" was thermal preservation required?
☑	☐	☐	If "Yes" were ALL samples collected the same day as receipt?
☐	☑		Completed Sample Preservation Verification Form?
☐	☑	☐	Samples chemically preserved correctly?
☑	☐		If "No", add wire tag and fill out Non-Conformance Form?
☑	☐		Received unpreserved Terracore kit?
			If "Yes" unpreserved vials must be frozen

Work Order Not Logged In with Short Hold / Rush

☐ Copies of COC To Lab Areas

Notes

Yes	No	
☑	☐	Were all samples logged into Epic?
☑	☐	Were all samples labelled?
☑	☐	Were samples placed on scan locations?

Initial / Date : IB 8/24/18

Pace Analytical® AQUEOUS SAMPLE PRESERVATION VERIFICATION

Client	Work Order #
QTC	4616820
Receipt Log # 19-2	Completed By (initials/date) JN 5-24-18 AM

COC ID # 19876

Adjusted by: _____

Date: _____

pH Strip Reagent or Lot #

☑ HC739245

☐ Other _____

Container Type	BP3C or AG3O		BP1-4S		AG2S		BP1-4N Total		BP1-4N Dissolved			
Preservative	NaOH >12		H_2SO_4 <2		H_2SO_4 <2		HNO_3 <2		HNO_3 <2			
pH	Received	Adjusted	Received	Adjusted	Received	Adjusted	Received	Adjusted	Received	Adjusted	Received	Adjusted
COC Line #1							✓					
COC Line #2												
COC Line #3												
COC Line #4							✓					
COC Line #5							✓					
COC Line #6							✓					
COC Line #7							✓					
COC Line #8							✓					
COC Line #9							✓					
COC Line #10							✓					
COC Line #11							✓					
COC Line #12							✓					

Comments:

Place a check mark in the Received box if pH is acceptable. If pH is not acceptable, document the Received and Adjusted pH values in the appropriate columns (project manager will review all adjustments at work order release). Never add more than 2x the default preservation volume (see table below for default volumes). Complete and attach a wire tag to all adjusted samples. A Sample Receiving Non-Conformance Report must be completed if a pH adjustment was required.

COC ID # 19877

Adjusted by: _____

Date: _____

Container Type	BP3C or AG3O		BP1-4S		AG2S		BP1-4N Total		BP1-4N Dissolved			
Preservative	NaOH >12		H_2SO_4 <2		H_2SO_4 <2		HNO_3 <2		HNO_3 <2			
pH	Received	Adjusted	Received	Adjusted	Received	Adjusted	Received	Adjusted	Received	Adjusted	Received	Adjusted
COC Line #1							✓					
COC Line #2							✓					
COC Line #3							✓					
COC Line #4							✓					
COC Line #5							✓					
COC Line #6							✓					
COC Line #7							✓					
COC Line #8							✓					
COC Line #9							✓					
COC Line #10							✓					
COC Line #11							✓					
COC Line #12							✓					

Comments:

Container Size (mL)	Default Preservative Volume (mL)
Container Types 5 / 23	NaOH
250	1.3
Container Type 4	H_2SO_4
125	0.5
250	1.0
500	2.0
1000	4.0
Container Type 13	H_2SO_4
500	2.5
Container Types 6 / 15	HNO_3
125	0.7
250	1.25
500	2.5
1000	5.0

Pace Analytical® AQUEOUS SAMPLE PRESERVATION VERIFICATION

Client	Work Order #
ATC	1616820
Receipt Log # 19-2	Completed By (initials/date)

COC ID # 19878

Adjusted by: _____

Date: _____

Container Type	BP3C or AG3O		BP1-4S		AG2S		BP1-4N Total		BP1-4N Dissolved			
Preservative	NaOH >12		H_2SO_4 <2		H_2SO_4 <2		HNO_3 <2		HNO_3 <2			
pH	Received	Adjusted	Received	Adjusted	Received	Adjusted	Received	Adjusted	Received	Adjusted	Received	Adjusted
COC Line #1							✓					
COC Line #2							✓					
COC Line #3							✓					
COC Line #4							✓					
COC Line #5							✓					
COC Line #6							✓					
COC Line #7							✓					
COC Line #8							✓					
COC Line #9							✓					
COC Line #10							✓					
COC Line #11							✓					
COC Line #12							✓					

Comments:

pH Strip Reagent or Lot #

☑ HC739245

☐ Other _____

Place a check mark in the Received box if pH is acceptable. If pH is not acceptable, document the Received and Adjusted pH values in the appropriate columns (project manager will review all adjustments at work order release). Never add more than 2x the default preservation volume (see table below for default volumes). Complete and attach a wire tag to all adjusted samples. A Sample Receiving Non-Conformance Report must be completed if a pH adjustment was required.

COC ID # 19879

Adjusted by: _____

Date: _____

Container Type	BP3C or AG3O		BP1-4S		AG2S		BP1-4N Total		BP1-4N Dissolved			
Preservative	NaOH >12		H_2SO_4 <2		H_2SO_4 <2		HNO_3 <2		HNO_3 <2			
pH	Received	Adjusted	Received	Adjusted	Received	Adjusted	Received	Adjusted	Received	Adjusted	Received	Adjusted
COC Line #1							✓					
COC Line #2							✓					
COC Line #3												
COC Line #4												
COC Line #5												
COC Line #6												
COC Line #7												
COC Line #8												
COC Line #9												
COC Line #10												
COC Line #11												
COC Line #12												

Comments:

Container Size (mL)	Default Preservative Volume (mL)
Container Types 5 / 23	NaOH
250	1.3
Container Type 4	H_2SO_4
125	0.5
250	1.0
500	2.0
1000	4.0
Container Type 13	H_2SO_4
500	2.5
Container Types 6 / 15	HNO_3
125	0.7
250	1.25
500	2.5
1000	5.0