ENVIRONMENTAL • GEOTECHNICAL
BUILDING SCIENCES • MATERIALS TESTING

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

September 13, 2018

Mathew Sam
Detroit Public Schools
1601 Farnsworth
Detroit, Michigan 48202

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

SUBJECT: **Drinking Water Screening Report**
Southeastern High School
3030 Fairview
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 two (2) of the samples analyzed were above the EPA recommended limits of 15 micrograms per liter (ug/L) for lead. Additionally, two (2) 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 (August 30, 2018)

Sample Number	Location	Description	Total Lead (ug/l)	Total Copper (ug/l)
1-101D-SRF-1	Main office	kitchen faucet	<1.0 ug/L	480 ug/L
1-HW-DWF-2	Across from restrooms & room139 (left fixture)	drinking water fountain	<1.0 ug/L	85.6 ug/L
1-HW-DWF-3	Across from restrooms & room139 (right fixture)	drinking water fountain	<1.0 ug/L	90.9 ug/L
B-K-KS-5	Dish washing station (left fixture)	kitchen faucet	**18.2 ug/L**	420 ug/L
B-K-KS-6	Dish washing station (middle fixture)	kitchen faucet	<1.0 ug/L	153 ug/L
B-K-KS-7	Dish washing station (right fixture)	kitchen faucet	<1.0 ug/L	58.7 ug/L
B-HW-DWF-10	Across from cafeteria (left fixture)	drinking water fountain	1.9 ug/L	674 ug/L
B-HW-DWF-11	Across from cafeteria (left fixture)	drinking water fountain	1.8 ug/L	755 ug/L
2-202-SRF-12	close to elevator	kitchen faucet	<1.0 ug/L	445 ug/L

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Sample Number	Location	Description	Total Lead (ug/l)	Total Copper (ug/l)
2-HW-DWF-13	between girls and boys bathroom (left fixture)	drinking water fountain	<1.0 ug/L	662 ug/L
2-HW-DWF-14	between girls and boys bathroom (right fixture)	drinking water fountain	<1.0 ug/L	666 ug/L
2-HW-DWF-15	across from room 248 between lockers (left fixture)	drinking water fountain	<1.0 ug/L	296 ug/L
2-HW-DWF-16	across from room 248 between lockers (right fixture)	drinking water fountain	<1.0 ug/L	299 ug/L
2-HW-DWF-17	between rooms 238 & 238A	drinking water fountain	<1.0 ug/L	**2430 ug/L**
2-HW-DWF-18	between rooms 235& 235A	drinking water fountain	<1.0 ug/L	578 ug/L
2-HW-DWF-19	across from room 225 (left fixture)	drinking water fountain	<1.0 ug/L	211 ug/L
2-HW-DWF-20	across from room 225 (right fixture)	drinking water fountain	<1.0 ug/L	208 ug/L
3-HW-DWF-21	between room 331 & 331A	drinking water fountain	1.6 ug/L	**1530 ug/L**
3-HW-DWF-22	Next to room 328	drinking water fountain	2.0 ug/L	621 ug/L
1-134-DWF-25	media center (left fixture)	drinking water fountain	<1.0 ug/L	423ug/L
1-134-DWF-26	media center (right fixture)	drinking water fountain	<1.0 ug/L	498 ug/L
1-HW-DWF-27	across from room 134 next to room 135	drinking water fountain	<1.0 ug/L	377 ug/L
1-HW-DWF-28	across from room 130 next to room 131	drinking water fountain	<1.0 ug/L	814 ug/L
1-HW-DWF-30	across from room 122 next to room 123 (right fixture)	drinking water fountain	<1.0 ug/L	149 ug/L

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Sample Number	Location	Description	Total Lead (ug/l)	Total Copper (ug/l)
3-302-SRF-32	Room 302	Staff Room Faucet	1.9 ug/L	141 ug/L
1-122-B-33	Room 122	Bubbler	7.3 ug/L	1220 ug/L
B-HW-B-34	Next to Room 017	Bubbler	<1.0 ug/L	549 ug/L
B-HW-B-35	Next to Room 017	Bubbler	<1.0 ug/L	389 ug/L
B-K-KS-36	Kitchen	Kitchen sink	**18.3 ug/L**	160 ug/L

Key: NA - Not Analyzed

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

Analysis of samples of the drinking water fountain located between rooms 238 & 238A and the drinking water fountain between room 331 & 331A indicate that lead levels were above the MCL. Analysis of samples of two kitchen sinks 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

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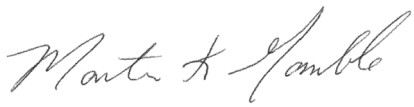
testing may be completed to assess the source of the elevated levels of lead and/or copper, as well as, any other response actions deemed necessary by DPS.

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

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

School Name: Southeastern High School

Address 3030 Fairview, Detroit, MI

Fixture Identification	Fixture Location	Fixture Description	Photo #
1-101D-SRF-1	Main office	kitchen faucet	1
1-HW-DWF-2	Across from restrooms & room139 (left fixture)	drinking water fountain	2
1-HW-DWF-3	Across from restrooms & room139 (right fixture)	drinking water fountain	3
B-K-KS-5	Dish washing station (left fixture)	kitchen faucet	4
B-K-KS-6	Dish washing station (middle fixture)	kitchen faucet	5
B-K-KS-7	Dish washing station (right fixture)	kitchen faucet	6
B-K-KS-8	Next to #7	hand wash	7
B-FOODC-FCF-9	In food court	hand wash	8
B-HW-DWF-10	Across from cafeteria (left fixture)	drinking water fountain	9
B-HW-DWF-11	Across from cafeteria (left fixture)	drinking water fountain	10
2-202-SRF-12	close to elevator	kitchen faucet	11

FIXTURE INVENTORY PHOTOLOG
Southeastern High School
Detroit, Michigan

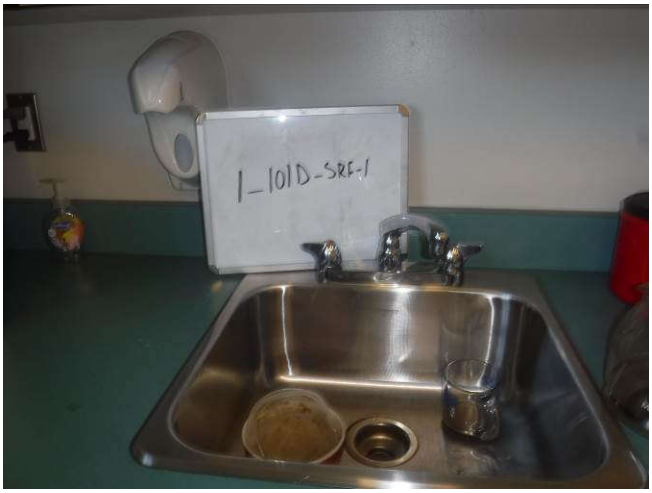


Photo 1: Kitchen faucet, located on 1st floor in main office

Photo 2:Drinking water fountain located on 1st floor Across from restrooms & room139 (left fixture)

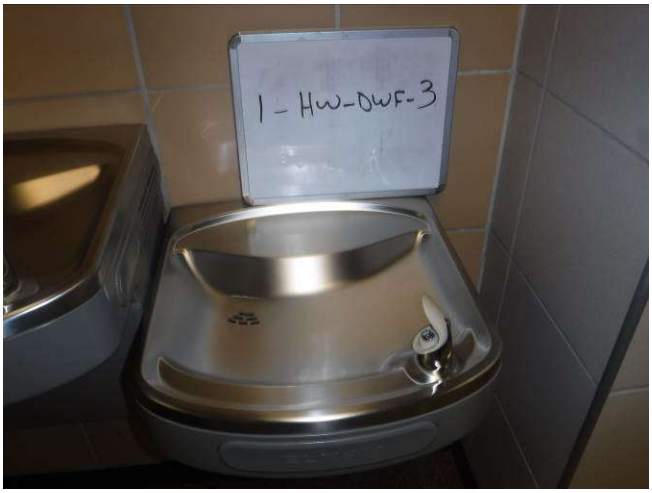


Photo 3: Drinking water fountain located on 1st floor Across from restrooms & room139 (right fixture)

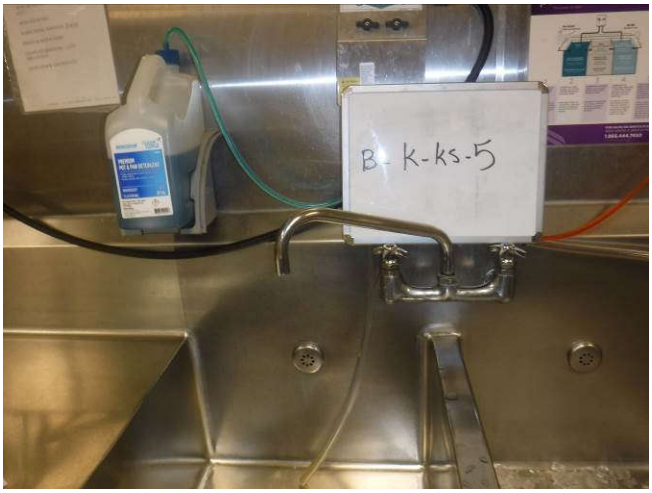


Photo 5:kitche faucet, located in basement in kitchen at Dish washing station (left fixture)

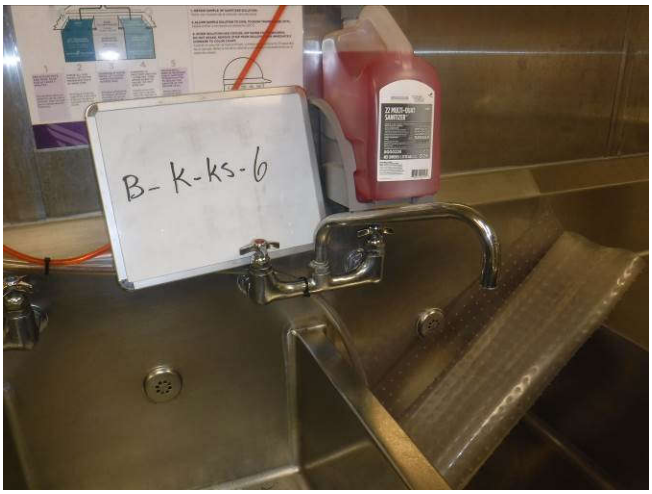


Photo 6: kitche faucet, located in basement in kitchen at Dish washing station (middle fixture)

Photo 7: kitche faucet, located in basement in kitchen at Dish washing station (right fixture))

Photo 8: Hand wash faucet, located in basement in kitchen next to #7

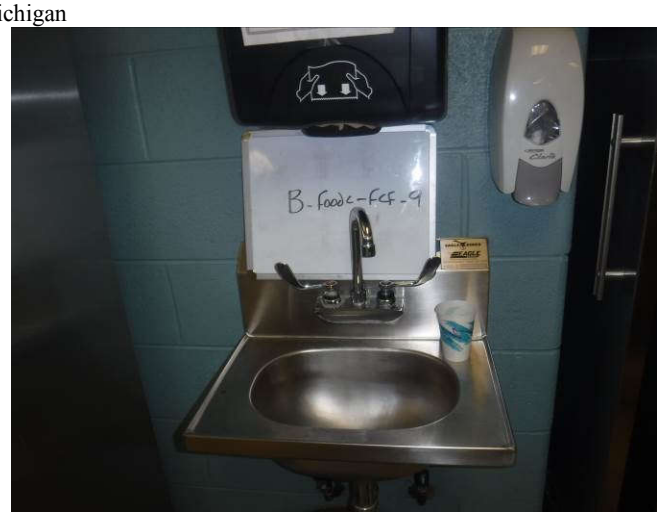


Photo 9: Hand wash faucet, located in basement in food court

Photo 10:Drinking water faucet, located in basement across from cafeteria (left fixture)

Photo 11: Drinking water faucet, located in basement across from cafeteria (right fixture)

Photo 12: Kitchen faucet, located 2nd floor staff room.

Photo 13: Drinking water fountain, between restrooms in 2nd floor (left fixture)

Photo 14: Drinking water fountain, between restrooms in 2nd floor (right fixture)

Photo 15: Hand wash faucet, bathroom in kindergarten classroom

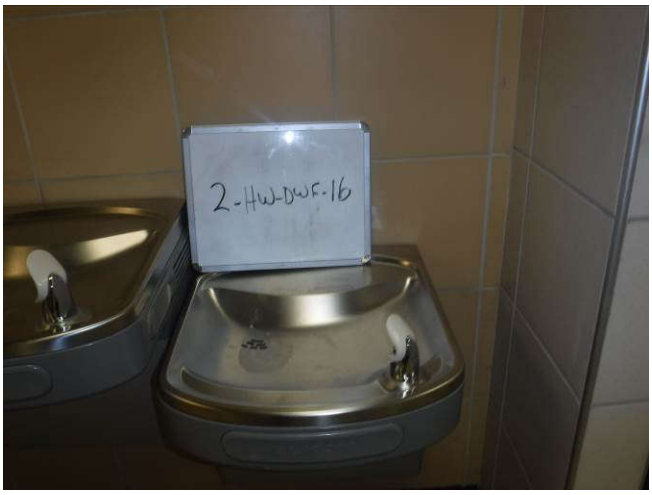


Photo 16: Drinking water fountain, located in a 2nd floor hallway across from room 248 (left fixture)

Photo 17: Drinking water fountain, located in a 2nd floor hallway between room 238 & 238A

Photo 18: Drinking water fountain, located in a 2nd floor in hallway between rooms 235 &235A

Photo 19: Drinking water fountain, located in a 2nd floor hallway across from room 225 (left fixture)

Photo 20: Drinking water fountain, located in a 2nd floor hallway across from room 225 (right fixture)

Photo 21: Drinking water fountain, located in a 3rd floor hallway between room 331 & 331A

Photo 22: Drinking water fountain, located in a 3rd floor hallway next to room 328

Photo 23: Drinking water fountain, located in a 3rd floor hallway across from room 323 (left fixture)-not working

Photo 24: Drinking water fountain, located in a 3rd floor hallway across from room 323 (right fixture)-not working

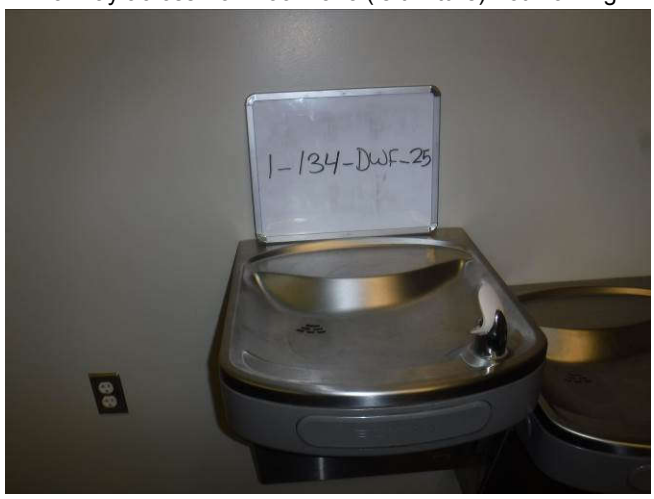


Photo 25: Drinking water fountain, located in a 1st floor in media center room (left fixture)

Photo 26: Drinking water fountain, located in a 1st floor in media center room (right fixture)

Photo 27: Drinking water fountain, located in a 1st floor hallway across from room 134 next to room 135

Photo 28: Drinking water fountain, located in a 1st floor hallway across from room 130 next to 131

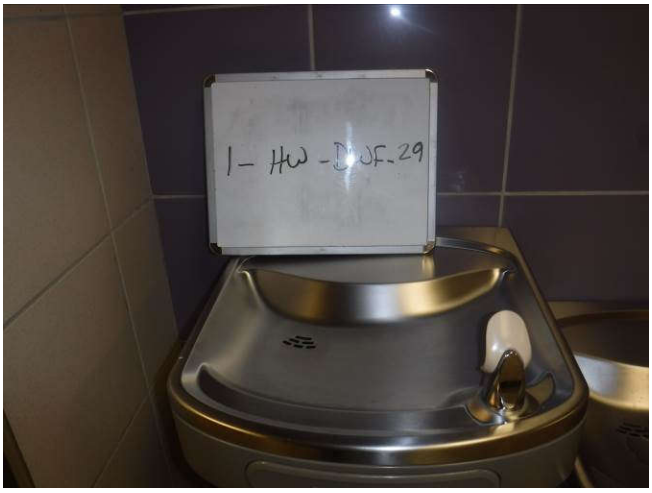


Photo 29: Drinking water fountain, located in a 1st floor hallway across from room 122 next to 123 (left fixture) not working

Photo 30: Drinking water fountain, located in a 1st floor hallway across from room 122 next to 123 (right fixture)

Photo 31: Drinking water fountain, located in a 1st floor hallway between lockers and room 118-not working

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

August 30, 2018

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

RE: Project: Southeastern High School
Pace Project No.: 4616515

Dear Robert Smith:
Enclosed are the analytical results for sample(s) received by the laboratory on August 17, 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: Southeastern High School
Pace Project No.: 4616515

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

REPORT OF LABORATORY ANALYSIS

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

SAMPLE SUMMARY

Project: Southeastern High School
Pace Project No.: 4616515

Lab ID	Sample ID	Matrix	Date Collected	Date Received
4616515001	**1-101D-SRF-1**	Drinking Water	08/08/18 10:33	08/17/18 18:00
4616515002	**1-HW-DWF-2**	Drinking Water	08/08/18 10:35	08/17/18 18:00
4616515003	**1-HW-DWF-3**	Drinking Water	08/08/18 10:36	08/17/18 18:00
4616515004	**B-K-KS-5**	Drinking Water	08/08/18 10:40	08/17/18 18:00
4616515005	**B-K-KS-6**	Drinking Water	08/08/18 10:41	08/17/18 18:00
4616515006	**B-K-KS-7**	Drinking Water	08/08/18 10:42	08/17/18 18:00
4616515007	**B-HW-DWF-10**	Drinking Water	08/08/18 10:44	08/17/18 18:00
4616515008	**B-HW-DWF-11**	Drinking Water	08/08/18 10:45	08/17/18 18:00
4616515009	**2-202-SRF-12**	Drinking Water	08/08/18 10:52	08/17/18 18:00
4616515010	**2-HW-DWF-13**	Drinking Water	08/08/18 10:53	08/17/18 18:00
4616515011	**2-HW-DWF-14**	Drinking Water	08/08/18 10:55	08/17/18 18:00
4616515012	**2-HW-DWF-15**	Drinking Water	08/08/18 10:57	08/17/18 18:00
4616515013	**2-HW-DWF-16**	Drinking Water	08/08/18 10:58	08/17/18 18:00
4616515014	**2-HW-DWF-17**	Drinking Water	08/08/18 11:00	08/17/18 18:00
4616515015	**2-HW-DWF-18**	Drinking Water	08/08/18 11:02	08/17/18 18:00
4616515016	**2-HW-DWF-19**	Drinking Water	08/08/18 11:03	08/17/18 18:00
4616515017	**2-HW-DWF-20**	Drinking Water	08/08/18 11:05	08/17/18 18:00
4616515018	**3-HW-DWF-21**	Drinking Water	08/08/18 11:06	08/17/18 18:00
4616515019	**3-HW-DWF-22**	Drinking Water	08/08/18 11:07	08/17/18 18:00
4616515020	**1-134-DWF-25**	Drinking Water	08/08/18 11:13	08/17/18 18:00
4616515021	**1-134-DWF-26**	Drinking Water	08/08/18 11:14	08/17/18 18:00
4616515022	**1-HW-DWF-27**	Drinking Water	08/08/18 11:30	08/17/18 18:00
4616515023	**1-HW-DWF-28**	Drinking Water	08/08/18 11:18	08/17/18 18:00
4616515024	**1-HW-DWF-30**	Drinking Water	08/08/18 11:20	08/17/18 18:00
4616515025	**3-302-SRF-32**	Drinking Water	08/08/18 11:10	08/17/18 18:00
4616515026	**1-122-B-33**	Drinking Water	08/08/18 11:16	08/17/18 18:00
4616515027	**B-HW-B-34**	Drinking Water	08/08/18 10:47	08/17/18 18:00
4616515028	**B-HW-B-35**	Drinking Water	08/08/18 10:48	08/17/18 18:00
4616515029	**B-K-KS-36**	Drinking Water	08/08/18 10:46	08/17/18 18:00

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: Southeastern High School
Pace Project No.: 4616515

Lab ID	Sample ID	Method	Analysts	Analytes Reported
4616515001	1-101D-SRF-1	EPA 200.8	NHAM	2
4616515002	1-HW-DWF-2	EPA 200.8	NHAM	2
4616515003	1-HW-DWF-3	EPA 200.8	NHAM	2
4616515004	B-K-KS-5	EPA 200.8	NHAM	2
4616515005	B-K-KS-6	EPA 200.8	NHAM	2
4616515006	B-K-KS-7	EPA 200.8	NHAM	2
4616515007	B-HW-DWF-10	EPA 200.8	NHAM	2
4616515008	B-HW-DWF-11	EPA 200.8	NHAM	2
4616515009	2-202-SRF-12	EPA 200.8	NHAM	2
4616515010	2-HW-DWF-13	EPA 200.8	NHAM	2
4616515011	2-HW-DWF-14	EPA 200.8	NHAM	2
4616515012	2-HW-DWF-15	EPA 200.8	NHAM	2
4616515013	2-HW-DWF-16	EPA 200.8	NHAM	2
4616515014	2-HW-DWF-17	EPA 200.8	NHAM	2
4616515015	2-HW-DWF-18	EPA 200.8	NHAM	2
4616515016	2-HW-DWF-19	EPA 200.8	NHAM	2
4616515017	2-HW-DWF-20	EPA 200.8	NHAM	2
4616515018	3-HW-DWF-21	EPA 200.8	NHAM	2
4616515019	3-HW-DWF-22	EPA 200.8	NHAM	2
4616515020	1-134-DWF-25	EPA 200.8	NHAM	2
4616515021	1-134-DWF-26	EPA 200.8	NHAM	2
4616515022	1-HW-DWF-27	EPA 200.8	NHAM	2
4616515023	1-HW-DWF-28	EPA 200.8	NHAM	2
4616515024	1-HW-DWF-30	EPA 200.8	NHAM	2
4616515025	3-302-SRF-32	EPA 200.8	NHAM	2
4616515026	1-122-B-33	EPA 200.8	NHAM	2
4616515027	B-HW-B-34	EPA 200.8	NHAM	2
4616515028	B-HW-B-35	EPA 200.8	NHAM	2
4616515029	B-K-KS-36	EPA 200.8	NHAM	2

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

ANALYTICAL RESULTS

Project: Southeastern High School
Pace Project No.: 4616515

Sample: 1-101D-SRF-1 **Lab ID: 4616515001** Collected: 08/08/18 10:33 Received: 08/17/18 18:00 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	**480**	ug/L	5.0	1300	5		08/28/18 11:57	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		08/28/18 09:39	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: Southeastern High School
Pace Project No.: 4616515

Sample: 1-HW-DWF-2 **Lab ID: 4616515002** Collected: 08/08/18 10:35 Received: 08/17/18 18:00 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	**85.6**	ug/L	1.0	1300	1		08/28/18 09:47	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		08/28/18 09:47	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: Southeastern High School
Pace Project No.: 4616515

Sample: 1-HW-DWF-3 **Lab ID: 4616515003** Collected: 08/08/18 10:36 Received: 08/17/18 18:00 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	**90.9**	ug/L	1.0	1300	1		08/28/18 09:48	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		08/28/18 09:48	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: Southeastern High School
Pace Project No.: 4616515

Sample: B-K-KS-5 **Lab ID: 4616515004** Collected: 08/08/18 10:40 Received: 08/17/18 18:00 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	**420**	ug/L	5.0	1300	5		08/28/18 12:01	7440-50-8	
Lead	**18.2**	ug/L	1.0	15	1		08/28/18 09:49	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: Southeastern High School
Pace Project No.: 4616515

Sample: B-K-KS-6 **Lab ID: 4616515005** Collected: 08/08/18 10:41 Received: 08/17/18 18:00 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	**153**	ug/L	1.0	1300	1		08/28/18 09:50	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		08/28/18 09:50	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: Southeastern High School
Pace Project No.: 4616515

Sample: B-K-KS-7 **Lab ID: 4616515006** Collected: 08/08/18 10:42 Received: 08/17/18 18:00 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	**58.7**	ug/L	1.0	1300	1		08/28/18 09:51	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		08/28/18 09:51	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: Southeastern High School
Pace Project No.: 4616515

Sample: B-HW-DWF-10 **Lab ID: 4616515007** Collected: 08/08/18 10:44 Received: 08/17/18 18:00 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	**674**	ug/L	5.0	1300	5		08/28/18 12:03	7440-50-8	
Lead	**1.9**	ug/L	1.0	15	1		08/28/18 09:53	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Grand Rapids, MI 49512
(616)975-4500

ANALYTICAL RESULTS

Project: Southeastern High School
Pace Project No.: 4616515

Sample: B-HW-DWF-11 **Lab ID: 4616515008** Collected: 08/08/18 10:45 Received: 08/17/18 18:00 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	**755**	ug/L	5.0	1300	5		08/28/18 12:04	7440-50-8	
Lead	**1.8**	ug/L	1.0	15	1		08/28/18 09:54	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(616)975-4500

ANALYTICAL RESULTS

Project: Southeastern High School
Pace Project No.: 4616515

Sample: 2-202-SRF-12 **Lab ID: 4616515009** Collected: 08/08/18 10:52 Received: 08/17/18 18:00 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	**445**	ug/L	5.0	1300	5		08/28/18 12:05	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		08/28/18 10:13	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Grand Rapids, MI 49512
(616)975-4500

ANALYTICAL RESULTS

Project: Southeastern High School
Pace Project No.: 4616515

Sample: 2-HW-DWF-13 **Lab ID: 4616515010** Collected: 08/08/18 10:53 Received: 08/17/18 18:00 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	**662**	ug/L	5.0	1300	5		08/28/18 12:06	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		08/28/18 10:14	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Southeastern High School
Pace Project No.: 4616515

Sample: 2-HW-DWF-14 **Lab ID: 4616515011** Collected: 08/08/18 10:55 Received: 08/17/18 18:00 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	**666**	ug/L	5.0	1300	5		08/28/18 12:07	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		08/28/18 14:06	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Southeastern High School
Pace Project No.: 4616515

Sample: 2-HW-DWF-15 **Lab ID: 4616515012** Collected: 08/08/18 10:57 Received: 08/17/18 18:00 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	**296**	ug/L	1.0	1300	1		08/28/18 10:24	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		08/28/18 10:24	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Southeastern High School
Pace Project No.: 4616515

Sample: 2-HW-DWF-16 **Lab ID: 4616515013** Collected: 08/08/18 10:58 Received: 08/17/18 18:00 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	**299**	ug/L	1.0	1300	1		08/28/18 10:25	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		08/28/18 10:25	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Southeastern High School
Pace Project No.: 4616515

Sample: 2-HW-DWF-17 **Lab ID: 4616515014** Collected: 08/08/18 11:00 Received: 08/17/18 18:00 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	**2430**	ug/L	50.0	1300	50		08/28/18 12:15	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		08/28/18 10:26	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(616)975-4500

ANALYTICAL RESULTS

Project: Southeastern High School
Pace Project No.: 4616515

Sample: 2-HW-DWF-18 **Lab ID: 4616515015** Collected: 08/08/18 11:02 Received: 08/17/18 18:00 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	**578**	ug/L	5.0	1300	5		08/28/18 12:16	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		08/28/18 10:27	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(616)975-4500

ANALYTICAL RESULTS

Project: Southeastern High School
Pace Project No.: 4616515

Sample: 2-HW-DWF-19 **Lab ID: 4616515016** Collected: 08/08/18 11:03 Received: 08/17/18 18:00 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	**211**	ug/L	1.0	1300	1		08/28/18 10:28	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		08/28/18 10:28	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Southeastern High School
Pace Project No.: 4616515

Sample: 2-HW-DWF-20 **Lab ID: 4616515017** Collected: 08/08/18 11:05 Received: 08/17/18 18:00 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	**208**	ug/L	1.0	1300	1		08/28/18 10:29	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		08/28/18 10:29	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Southeastern High School
Pace Project No.: 4616515

Sample: 3-HW-DWF-21 **Lab ID: 4616515018** Collected: 08/08/18 11:06 Received: 08/17/18 18:00 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	**1530**	ug/L	50.0	1300	50		08/28/18 12:17	7440-50-8	
Lead	**1.6**	ug/L	1.0	15	1		08/28/18 10:30	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Southeastern High School
Pace Project No.: 4616515

Sample: 3-HW-DWF-22 **Lab ID: 4616515019** Collected: 08/08/18 11:07 Received: 08/17/18 18:00 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	**621**	ug/L	5.0	1300	5		08/28/18 12:18	7440-50-8	
Lead	**2.0**	ug/L	1.0	15	1		08/28/18 10:31	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Southeastern High School
Pace Project No.: 4616515

Sample: 1-134-DWF-25 **Lab ID: 4616515020** Collected: 08/08/18 11:13 Received: 08/17/18 18:00 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	**423**	ug/L	5.0	1300	5		08/28/18 12:19	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		08/28/18 10:33	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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(616)975-4500

ANALYTICAL RESULTS

Project: Southeastern High School
Pace Project No.: 4616515

Sample: 1-134-DWF-26 **Lab ID: 4616515021** Collected: 08/08/18 11:14 Received: 08/17/18 18:00 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	**498**	ug/L	5.0	1300	5		08/28/18 12:21	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		08/28/18 10:40	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(616)975-4500

ANALYTICAL RESULTS

Project: Southeastern High School
Pace Project No.: 4616515

Sample: 1-HW-DWF-27 **Lab ID: 4616515022** Collected: 08/08/18 11:30 Received: 08/17/18 18:00 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	**377**	ug/L	5.0	1300	5		08/28/18 12:29	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		08/28/18 10:44	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: Southeastern High School
Pace Project No.: 4616515

Sample: 1-HW-DWF-28 **Lab ID: 4616515023** Collected: 08/08/18 11:18 Received: 08/17/18 18:00 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	**814**	ug/L	5.0	1300	5		08/28/18 12:30	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		08/28/18 10:45	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Southeastern High School
Pace Project No.: 4616515

Sample: 1-HW-DWF-30 **Lab ID: 4616515024** Collected: 08/08/18 11:20 Received: 08/17/18 18:00 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	**149**	ug/L	1.0	1300	1		08/28/18 10:46	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		08/28/18 10:46	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: Southeastern High School
Pace Project No.: 4616515

Sample: 3-302-SRF-32 **Lab ID: 4616515025** Collected: 08/08/18 11:10 Received: 08/17/18 18:00 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		08/28/18 10:47	7440-50-8	
Lead	**1.9**	ug/L	1.0	15	1		08/28/18 10:47	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(616)975-4500

ANALYTICAL RESULTS

Project: Southeastern High School
Pace Project No.: 4616515

Sample: 1-122-B-33 **Lab ID: 4616515026** Collected: 08/08/18 11:16 Received: 08/17/18 18:00 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	**1220**	ug/L	50.0	1300	50		08/28/18 12:31	7440-50-8	
Lead	**7.3**	ug/L	1.0	15	1		08/28/18 10:52	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Southeastern High School
Pace Project No.: 4616515

Sample: B-HW-B-34 **Lab ID: 4616515027** Collected: 08/08/18 10:47 Received: 08/17/18 18:00 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	**549**	ug/L	5.0	1300	5		08/28/18 12:32	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		08/28/18 10:54	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Southeastern High School
Pace Project No.: 4616515

Sample: B-HW-B-35 **Lab ID: 4616515028** Collected: 08/08/18 10:48 Received: 08/17/18 18:00 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	**389**	ug/L	5.0	1300	5		08/28/18 12:33	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		08/28/18 10:55	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Southeastern High School
Pace Project No.: 4616515

Sample: B-K-KS-36 **Lab ID: 4616515029** Collected: 08/08/18 10:46 Received: 08/17/18 18:00 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	**160**	ug/L	1.0	1300	1		08/28/18 10:56	7440-50-8	
Lead	**18.3**	ug/L	1.0	15	1		08/28/18 10:56	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Grand Rapids, MI 49512
(616)975-4500

QUALITY CONTROL DATA

Project: Southeastern High School
Pace Project No.: 4616515

QC Batch: 31840 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: ICPMS Metals, No Prep
Associated Lab Samples: 4616515001, 4616515002, 4616515003, 4616515004, 4616515005, 4616515006, 4616515007, 4616515008, 4616515009, 4616515010, 4616515011, 4616515012, 4616515013, 4616515014, 4616515015, 4616515016, 4616515017, 4616515018, 4616515019, 4616515020

METHOD BLANK: 128549 Matrix: Water
Associated Lab Samples: 4616515001, 4616515002, 4616515003, 4616515004, 4616515005, 4616515006, 4616515007, 4616515008, 4616515009, 4616515010, 4616515011, 4616515012, 4616515013, 4616515014, 4616515015, 4616515016, 4616515017, 4616515018, 4616515019, 4616515020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	<1.0	1.0	08/28/18 09:37	
Lead	ug/L	<1.0	1.0	08/28/18 09:37	

LABORATORY CONTROL SAMPLE: 128550

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 128551 128552

Parameter	Units	4616515001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	480	100	100	580	574	100	94	70-130	1	20	
Lead	ug/L	<1.0	20	20	19.5	22.7	95	112	70-130	15	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 128554 128555

Parameter	Units	4616515011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	666	100	100	759	754	93	88	70-130	1	20	
Lead	ug/L	<1.0	20	20	22.4	22.5	110	111	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
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QUALITY CONTROL DATA

Project: Southeastern High School
Pace Project No.: 4616515

QC Batch: 31842 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: ICPMS Metals, No Prep
Associated Lab Samples: 4616515021, 4616515022, 4616515023, 4616515024, 4616515025, 4616515026, 4616515027, 4616515028, 4616515029

METHOD BLANK: 128561 Matrix: Water
Associated Lab Samples: 4616515021, 4616515022, 4616515023, 4616515024, 4616515025, 4616515026, 4616515027, 4616515028, 4616515029

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	<1.0	1.0	08/28/18 10:38	
Lead	ug/L	<1.0	1.0	08/28/18 10:38	

LABORATORY CONTROL SAMPLE: 128562

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	20	18.1	91	85-115	
Lead	ug/L	20	18.4	92	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 128563 128564

Parameter	Units	4616515021 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	498	100	100	603	588	106	90	70-130	3	20	
Lead	ug/L	<1.0	20	20	22.0	21.4	110	106	70-130	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 128566 128567

Parameter	Units	4616516002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	20.3	20	20	39.8	39.8	97	98	70-130	0	20	
Lead	ug/L	14.3	20	20	35.9	35.1	108	104	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: Southeastern High School
Pace Project No.: 4616515

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: Southeastern High School
Pace Project No.: 4616515

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4616515001	**1-101D-SRF-1**	EPA 200.8	31840		
4616515002	**1-HW-DWF-2**	EPA 200.8	31840		
4616515003	**1-HW-DWF-3**	EPA 200.8	31840		
4616515004	**B-K-KS-5**	EPA 200.8	31840		
4616515005	**B-K-KS-6**	EPA 200.8	31840		
4616515006	**B-K-KS-7**	EPA 200.8	31840		
4616515007	**B-HW-DWF-10**	EPA 200.8	31840		
4616515008	**B-HW-DWF-11**	EPA 200.8	31840		
4616515009	**2-202-SRF-12**	EPA 200.8	31840		
4616515010	**2-HW-DWF-13**	EPA 200.8	31840		
4616515011	**2-HW-DWF-14**	EPA 200.8	31840		
4616515012	**2-HW-DWF-15**	EPA 200.8	31840		
4616515013	**2-HW-DWF-16**	EPA 200.8	31840		
4616515014	**2-HW-DWF-17**	EPA 200.8	31840		
4616515015	**2-HW-DWF-18**	EPA 200.8	31840		
4616515016	**2-HW-DWF-19**	EPA 200.8	31840		
4616515017	**2-HW-DWF-20**	EPA 200.8	31840		
4616515018	**3-HW-DWF-21**	EPA 200.8	31840		
4616515019	**3-HW-DWF-22**	EPA 200.8	31840		
4616515020	**1-134-DWF-25**	EPA 200.8	31840		
4616515021	**1-134-DWF-26**	EPA 200.8	31842		
4616515022	**1-HW-DWF-27**	EPA 200.8	31842		
4616515023	**1-HW-DWF-28**	EPA 200.8	31842		
4616515024	**1-HW-DWF-30**	EPA 200.8	31842		
4616515025	**3-302-SRF-32**	EPA 200.8	31842		
4616515026	**1-122-B-33**	EPA 200.8	31842		
4616515027	**B-HW-B-34**	EPA 200.8	31842		
4616515028	**B-HW-B-35**	EPA 200.8	31842		
4616515029	**B-K-KS-36**	EPA 200.8	31842		

WO# : 4616515

4616515

CHAIN-OF-CUSTODY / Analytical Request Document # 19846

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

Page : 1 Of 3

Section C Invoice Information:		
Company: ATC Group Services LLC	Report To: Robert Smith	Attention:
Address: 46555 Humboldt Drive, Suite 100	Copy To:	Company Name:
Novi, MI 48377		Address:
Email: robert.smith@atcgs.com	Purchase Order #:	Pace Quote:
Phone: 248-669-5140 Fax: 248-669-5147	Project Name: Lead & Copper Testing	Pace Project Manager: Will Cole
Requested Due Date:	Project #: Southeastern High School	Pace Profile #: Profile 236 - Line 2

Regulatory Agency

State / Location: MI

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	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)
1	1-101D-SRF-1	DW	G	8/8/18	10:33				1			X							X	
2	1-HW-DWF-2	DW	G	8/8/18	10:35				1			X							X	
3	1-HW-DWF-3	DW	G	8/8/18	10:36				1			X							X	
4	B-K-KS-5	DW	G	8/8/18	10:40				1			X							X	
5	B-K-KS-6	DW	G	8/8/18	10:41				1			X							X	
6	B-K-KS-7	DW	G	8/8/18	10:42				1			X							X	
7	B-HW-DWF-10	DW	G	8/8/18	10:44				1			X							X	
8	B-HW-DWF-11	DW	G	8/8/18	10:45				1			X							X	
9	2-202-SRF-12	DW	G	8/8/18	10:52				1			X							X	
10	2-HW-DWF-13	DW	G	8/8/18	10:53				1			X							X	
11	2-HW-DWF-14	DW	G	8/8/18	10:55				1			X							X	
12	2-HW-DWF-15	DW	G	8/8/18	10:57				1			X							X	

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

(8-29) DRT 3

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
		8/17/18	1800	D. NORDIN	8/17/18	1800	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Dominique Greer

SIGNATURE of SAMPLER:

DATE Signed: 8/8/2018

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 # 19847

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

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	ATC Group Services LLC	Report To:	Robert Smith	Attention:	
Address:	46555 Humboldt Drive, Suite 100	Copy To:		Company Name:	
Novi, MI 48377				Address:	
Email:	robert.smith@atcgs.com	Purchase Order #:		Pace Quote:	
Phone:	248-669-5140 Fax: 248-669-5147	Project Name:	Lead & Copper Testing	Pace Project Manager:	Will Cole
Requested Due Date:		Project #:	Southeastern High School	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)
13	2-HW-DWF-16	DW	G	8/8/18	10:58				1			X							X	
14	2-HW-DWF-17	DW	G	8/8/18	11:00				1			X							X	
15	2-HW-DWF-18	DW	G	8/8/18	11:02				1			X							X	
16	2-HW-DWF-19	DW	G	8/8/18	11:03				1			X							X	
17	2-HW-DWF-20	DW	G	8/8/18	11:05				1			X							X	
18	3-HW-DWF-21	DW	G	8/8/18	11:06				1			X							X	
19	3-HW-DWF-22	DW	G	8/8/18	11:07				1			X							X	
20	1-134-DWF-25	DW	G	8/8/18	11:13				1			X							X	
21	1-134-DWF-26	DW	G	8/8/18	11:14				1			X							X	
22	1-HW-DWF-27	DW	G	8/8/18	11:30				1			X							X	
23	1-HW-DWF-28	DW	G	8/8/18	11:18				1			X							X	
24	1-HW-DWF-30	DW	G	8/8/18	11:20				1			X							X	

8-29

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
		8/17/18	1800	D. Gardin	8/17/18	1242	
					8/17/18	1800	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Dominique Greer

SIGNATURE of SAMPLER:

DATE Signed: 8/8/2018

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 # 19848

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

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	ATC Group Services LLC	Report To:	Robert Smith	Attention:	
Address:	46555 Humboldt Drive, Suite 100	Copy To:		Company Name:	
Novi, MI 48377				Address:	
Email:	robert.smith@atcgs.com	Purchase Order #:		Pace Quote:	
Phone:	248-669-5140 Fax: 248-669-5147	Project Name:	Lead & Copper Testing	Pace Project Manager:	Will Cole
Requested Due Date:		Project #:	Southeastern High School	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 Y/N	Lead & Copper	Residual Chlorine (Y/N)
25	3-302-SRF-32	DW	G	8/8/18	11:10				1			X							X	
26	1-122-B-33	DW	G	8/8/18	11:16				1			X							X	
27	B-HW-B-34	DW	G	8/8/18	10:47				1			X							X	
28	B-HW-B-35	DW	G	8/8/18	10:48				1			X							X	
29	B-K-KS-36	DW	G	8/8/18	10:46				1			X							X	

(8-29)

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
		8/17/18	1800	D. Wardin	8/17/18	1202	
					8/17/18	1800	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Dominique Greer

SIGNATURE of SAMPLER:

DATE Signed: 8/8/2018

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 #: 4616515
Receipt Record Page/Line #: 8-29	

Recorded by (initials/date)		Qty Received	Thermometer Used
DN 8-17-18	☑ Cooler / ☐ Box / ☐ Other ______	1	☑ IR Gun (#202) / ☐ Digital Thermometer (#54) / ☐ IR Gun (#402)

Cooler # 0005092 Time 053	Cooler # Time	Cooler # Time	Cooler # Time
Custody Seals: ☑ None ☐ Present / Intact ☐ Present / Not Intact	Custody Seals: ☐ None ☐ Present / Intact ☐ Present / Not Intact	Custody Seals: ☐ None ☐ Present / Intact ☐ Present / Not Intact	Custody Seals: ☐ None ☐ Present / Intact ☐ Present / Not Intact
Coolant Type: ☐ Loose Ice ☐ Bagged Ice ☐ Blue Ice ☑ None	Coolant Type: ☐ Loose Ice ☐ Bagged Ice ☐ Blue Ice ☐ None	Coolant Type: ☐ Loose Ice ☐ Bagged Ice ☐ Blue Ice ☐ None	Coolant Type: ☐ Loose Ice ☐ Bagged Ice ☐ Blue Ice ☐ None
Coolant Location: Dispersed / Top / Middle / Bottom	Coolant Location: Dispersed / Top / Middle / Bottom	Coolant Location: Dispersed / Top / Middle / Bottom	Coolant Location: Dispersed / Top / Middle / Bottom
Temp Blank Present: ☐ Yes ☐ No	Temp Blank Present: ☐ Yes ☐ No	Temp Blank Present: ☐ Yes ☐ No	Temp Blank Present: ☐ Yes ☐ No
If Present, Temperature Blank Location is: ☐ Representative ☐ Not Representative	If Present, Temperature Blank Location is: ☐ Representative ☐ Not Representative	If Present, Temperature Blank Location is: ☐ Representative ☐ Not Representative	If Present, Temperature Blank Location is: ☐ Representative ☐ Not Representative

Cooler 1:

	Observed °C	Correction Factor °C	Actual °C
Temp Blank:			
Sample 1:		0	25.0
Sample 2:		0	25.0
Sample 3:		0	25.4

When above 6 °C take a 3 Sample Average °C: 25.1

☐ 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: 19846, 19847, 19848

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 : TS 8/18/18

Pace Analytical® AQUEOUS SAMPLE PRESERVATION VERIFICATION

Client	Work Order #
Receipt Log # 8-29	461515
Completed By (initials/date) JN 8-17-18	

COC ID # 19846

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 # 19847

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 #
CTC	461851S
Receipt Log # 8-29	Completed By (initials/date): JN 8.17.18

COC ID # 19848

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 #

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