LIMITED LEAD AND COPPER DRINKING WATER
JUNE 2021 SAMPLING EVENT

ACPS CHARLES BARRETT ELEMENTARY SCHOOL

1115 MARTHA CUSTIS DRIVE
ALEXANDRIA, VIRGINIA 22302

ECS PROJECT NO. 47:11652-E

FOR: ALEXANDRIA CITY PUBLIC SCHOOLS

JUNE 24, 2021

June 24, 2021

Mr. John Contreras
Alexandria City Public Schools
1340 Braddock Place
Alexandria, Virginia 22314
john.contreras@acps.k12.va.us

ECS Project No. 47:11652-E

Reference: Limited Lead and Copper Drinking Water June 2021 Sampling Event, ACPS Charles Barrett Elementary School, 1115 Martha Custis Drive, Alexandria, Virginia

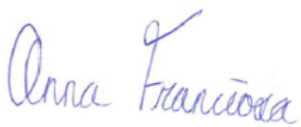
Dear Mr. Contreras:

ECS Mid-Atlantic, LLC (ECS) is pleased to provide Alexandria City Public Schools with the results of the Limited Lead and Copper Drinking Water June 2021 Sampling Event performed at ACPS Charles Barrett Elementary School located at 1115 Martha Custis Drive in Alexandria, Virginia. This report summarizes our observations, analytical results, findings, and recommendations related to the work performed. The work described in this report was performed by ECS in general accordance with the Scope of Services described in ECS Proposal Number 47:16189-EP and the terms and conditions of the agreement authorizing those services.

ECS appreciates this opportunity to provide Alexandria City Public Schools with our services. If we can be of further assistance to you, please do not hesitate to contact us.

Sincerely,

ECS Mid-Atlantic, LLC



Anna C. Franciosa, P.E.
Project Manager
afranciosa@ecslimited.com
202-400-2188

Michael Hamill, CIH
Senior Project Manager
MHamill@ecslimited.com
703-471-8400

TABLE OF CONTENTS

PAGE

TABLE OF APPENDICES

1.0 SITE DESCRIPTION

The ACPS Charles Barrett Elementary School is a two-story school building with a basement located at 1115 Martha Custus Drive in Alexandria, Virginia. The building is currently occupied and is used by Alexandria City Public Schools (ACPS) as a school. The site is located within Alexandria and is under the jurisdiction of the City of Alexandria and U.S. Environmental Protection Agency (EPA) drinking water regulations.

The site receives water from Virginia American Water, which is classified as a public drinking water system by the EPA under the Safe Drinking Water Act (SDWA). This ACPS building is connected to a public water system and therefore; does not have its own water supply nor is it considered a non-transient, non-community water system (NTNCWS) as defined by the EPA's Lead and Copper Rule.

2.0 PURPOSE

ECS previously provided lead and copper drinking water testing at the Charles Barrett Elementary School in January 2020, October 2020, and February 2021. The purpose of this water sampling event was to perform periodic testing of the elementary school to identify if the sinks, water fountains, bottle refilling stations, and/or bubblers within the above-referenced building contain lead and/or copper concentrations in excess of the EPA's Lead and Copper Rule action levels as a part of the ACPS 3-year rotating sampling plan. The purpose of this sampling event was a screening of the potable outlets (sinks, water fountains, bottle refilling stations, and bubblers excluding gang bathroom sinks) within the building.

The EPA created the Lead and Copper Rule under the SWDA. The EPA's Lead and Copper Rule established a lead action level of 0.015 mg/L (milligrams/liter) or 0.015 parts per million (PPM). The EPA's Lead and Copper Rule established a copper action level of 1.3 mg/L or 1.3 PPM. Note that ACPS buildings are not regulated by the EPA's Lead and Copper Rule because they do not meet the definition of a public water system as defined in EPA's 40 CFR Section 141 Subpart A.

The Code of Virginia § 22.1-135.1 currently requires Virginia school boards to develop and implement a plan to test, and if necessary, remediate potable water sources identified by the US EPA as a high priority. Each local school board shall submit testing plans and laboratory results to the Department of Health. If potable water sources are detected at or above 10 parts per billion (0.010 PPM), the school board shall notify parents of such results.

The US EPA's 3Ts for Reducing Lead in Drinking Water in Schools: Revised Technical Guidance (EPA 815-B-18-007) was created to provide recommendations on how to address lead in drinking water in schools and child care facilities. The procedures and response actions outlined in the EPA's 3Ts document are recommendations not requirements. The EPA's 3Ts guidance document does not set action levels for lead or copper in drinking water but it does reference the action levels created for public water systems in the EPA's Lead and Copper Rule. The results of this water sampling event will be compared to the action levels set in the EPA's Lead and Copper Rule.

3.0 METHODOLOGY

ECS performed the authorized Scope of Services in general accordance with our proposal, standard industry practice(s) and methods specified by regulation(s) for sampling drinking water.

3.1 Lead and Copper Drinking Water

Sample protocols were performed in general accordance with the US EPA's 3Ts for Reducing Lead in Drinking Water in Schools: Revised Technical Guidance (EPA 815-B-18-007) and the US EPA's Lead and Copper Rule. Water samples were collected from approximately 20% of the accessible potable water sources within the building including sinks, water fountains, and bottle refilling stations, with a minimum of two samples per floor. Samples were not collected from the exterior of the building or from janitor slop sinks.

ECS coordinated the water sampling with ACPS officials, and it is ECS's understanding that all of the water sources sampled were not in use at least 8 hours prior to sampling. ACPS personnel granted ECS access to the building. ECS attempted to access all drinking water sources within the building. During sampling, initial draw samples were collected. The samples were collected in 250 mL bottles with a nitric acid preservative. These water bottles were provided to ECS by Maryland Spectral Services, Inc. The water samples were provided with unique identification labels which include the school initials, a sequential number identifier, and sample location identifier.

The collected water samples were sealed and transported by courier to Maryland Spectral Services, Inc. located in Baltimore, Maryland. The water samples were submitted for lead and copper drinking water analysis per EPA Method 200.8.

Please note that efforts were made to collect samples from selected outlets in accordance with the methodology described above. Some areas within the building were locked. ECS was not able to sample outlets in the locked areas.

4.0 RESULTS

The following is a summary of laboratory results, findings and observations.

4.1 Lead in Drinking Water

The water sample collected from the bubbler in Room 228 was reported to have a concentration above the EPA lead action level of 0.015 mg/L (PPM). In total, fourteen (14) water samples were collected from the building. A table of the collected samples and the associated analytical results can be found in the appendices. Note that the analytical results displayed in the table have been converted to mg/L (PPM) for easy reference. A copy of the laboratory analytical results and chain of custody are attached to this report. A sketch identifying the approximate location of each water sample can also be found in the appendices.

4.2 Copper in Drinking Water

None of the water samples collected were reported to have concentrations above the EPA copper action level of 1.3 mg/L (PPM). In total, fourteen (14) water samples were collected from the building. A table of the collected samples and the associated analytical results can be found in the appendices. Note that the analytical results displayed in the table have been converted to mg/L (PPM) for easy reference. A copy of the laboratory analytical results and chain of custody are attached to this report. A sketch identifying the approximate location of each water sample can also be found in the appendices.

5.0 RECOMMENDATIONS AND REGULATORY REQUIREMENTS

Based on our understanding of the purpose of the Limited Lead and Copper Drinking Water June 2021 Sampling Event, the results of laboratory analysis, and our findings and observations, ECS presents the following recommendations.

5.1 Lead in Drinking Water

The water sample collected from the bubbler in Room 228 was reported to have a concentration above the EPA lead action level of 0.015 mg/L (ppm). The other water samples collected from the building were reported below the action level. The EPA's 3Ts document recommends that if initial testing results are reported above the action level, follow-up flush sampling should be performed to determine if the contamination is from the fixture or interior plumbing components.

ECS recommends follow-up flush testing be performed for the water outlets which were reported to have concentrations above the EPA lead action level of 0.015 mg/L (PPM) as described above.

Pending the results of the follow-up testing, ECS recommends the following steps be immediately implemented:

- Water outlets that were reported to have elevated levels should be shut-off until additional remediation steps are established and implemented.
- Placards should be posted on the elevated outlets with notices that water should not be consumed or used for cooking. The placards should use pictures if there are small children using the building.
- Consult the plumbing staff, facilities staff, and EPA's 3Ts document to determine whether short term control measures should be implemented prior to the receiving the follow-up flush sampling results.

In addition to the remediation efforts for the elevated outlets, ECS recommends periodic follow-up screening be performed for the building. The EPA does not specify a specific time frame for which follow-up testing for schools needs to be performed. The EPA suggest that schools and child care facilities make testing a part of their routine building operations and states that annual monitoring provides information on changing concentrations and the effectiveness of remediation or treatment options.

As good practice, ECS recommends performing follow-up periodic testing every three years. If additional guidelines or regulations are enacted at a state or federal level, the frequency of testing should be modified to reflect these changes.

In the US EPA 3Ts document, routine control measures are recommended as general good practice for over-all drinking water safety. The routine control measures that should be conducted to prevent exposure to elevated levels of lead, include the following:

- Clean debris from all accessible screens frequently. If you discovered sediments in faucet screens, have the sediments tested for lead and continue to clean your screens frequently, even if the analysis finds no lead.
- Use only cold water for food and beverage preparation. Hot water will dissolve lead more quickly than cold water and is likely to contain increased lead levels. If hot water is needed, it should be taken from the cold water tap and heated on a stove or in a microwave oven.
- Instruct the users (students and staff) to run the water before drinking or staff could run the water before students arrive, so they are drinking water that has not been in contact with the faucet interior since faucets are often a major source of lead in drinking water.
- Placard bathroom sinks with notices that water should not be consumed. You should use pictures if there are small children using bathrooms.
- US EPA recommends public notification of the findings of this sample event to the public and school staff. EPA has described different procedures for dissemination of this information which are described in Section III.6 of the 3 Ts document. The school should review the different methods described and choose the most appropriate method for the school.

5.2 Copper in Drinking Water

The sample results were reported below the EPA's Lead and Copper Rule copper action level. No additional testing or remediation action in response to this copper drinking water sampling event is recommended at this time.

The EPA does not specify a specific time frame for which follow-up testing for schools needs to be performed. The EPA suggests that schools and child care facilities make testing a part of their routine building operations and states that annual monitoring provides information on changing concentrations and the effectiveness of remediation or treatment options. As good practice, ECS recommends including this building in a comprehensive periodic follow-up screening sampling plan in which screening samples should be collected from this building at a minimum of every three years. If additional guidelines or regulations are enacted at a state or federal level in the future, the frequency of testing should be modified to reflect these changes.

6.0 LIMITATIONS

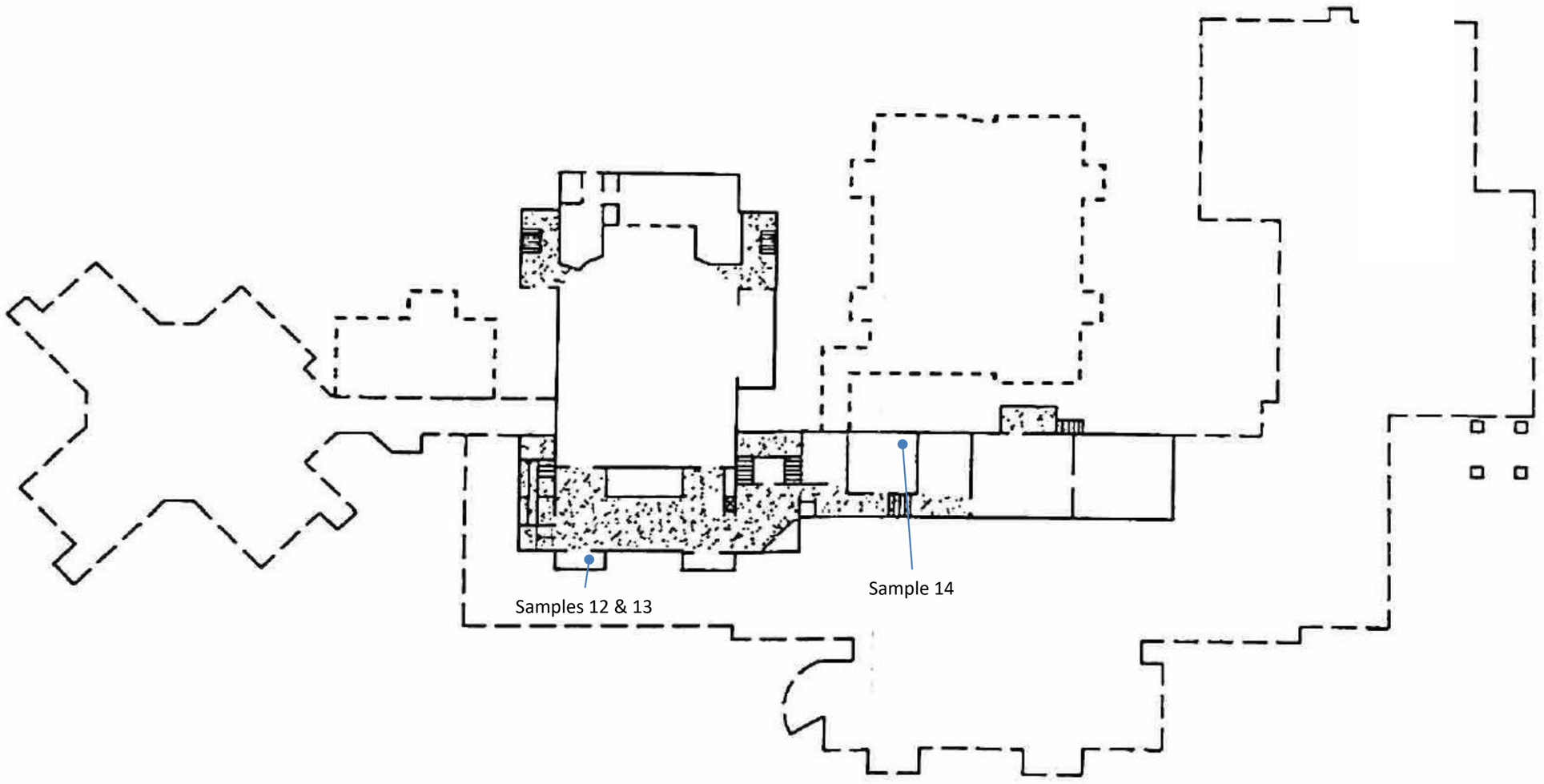
The conclusions and recommendations presented within this report are based upon a reasonable level of assessment within normal bounds and standards of professional practice for a site in this particular geographic setting. ECS is not responsible or liable for the discovery and elimination of hazards that may potentially cause damage, accidents, or injuries.

The observations, conclusions, and recommendations pertaining to environmental conditions at the subject site are necessarily limited to conditions observed, and/or materials reviewed at the time this study was undertaken. No warranty, expressed or implied, is made with regard to the conclusions and recommendations presented within this report. This report is provided for the exclusive use of the client. This report is not intended to be used or relied upon in connection with other projects or by other unidentified third parties without the written consent of ECS and the client.

The water samples collected and analyzed are only reflective of conditions at the time of this sampling event for the date of this report and these parameters can vary rapidly over time, depending upon a number of conditions, including site-specific construction and environmental factors. As such, the sampling and results associated with this assessment is intended only as a description of available information at the dates and locations given. This report has been prepared in accordance with generally accepted environmental practices. Our conclusions and findings are based, in part, upon information provided to us by others and our site observations. We have not verified the completeness or accuracy of the information provided by others.

Our recommendations are in part based on federal, state, and local regulations and guidelines. ECS does not assume the responsibility of the person(s) in charge of the site, or otherwise undertake responsibility for reporting to any local, state, or federal public agencies, any conditions at the site that may present a potential danger to public health, safety, or the environment. Under this scope of services, ECS assumes no responsibility regarding any response actions initiated as a result of these findings. General compliance with regulations and response actions are the sole responsibility of the Client and should be conducted in accordance with local, state, and/or federal requirements.

Appendix I: Sample Location Sketch



Inaccessible Area

Elevated Lead

Elevated Copper

Elevated Lead & Copper

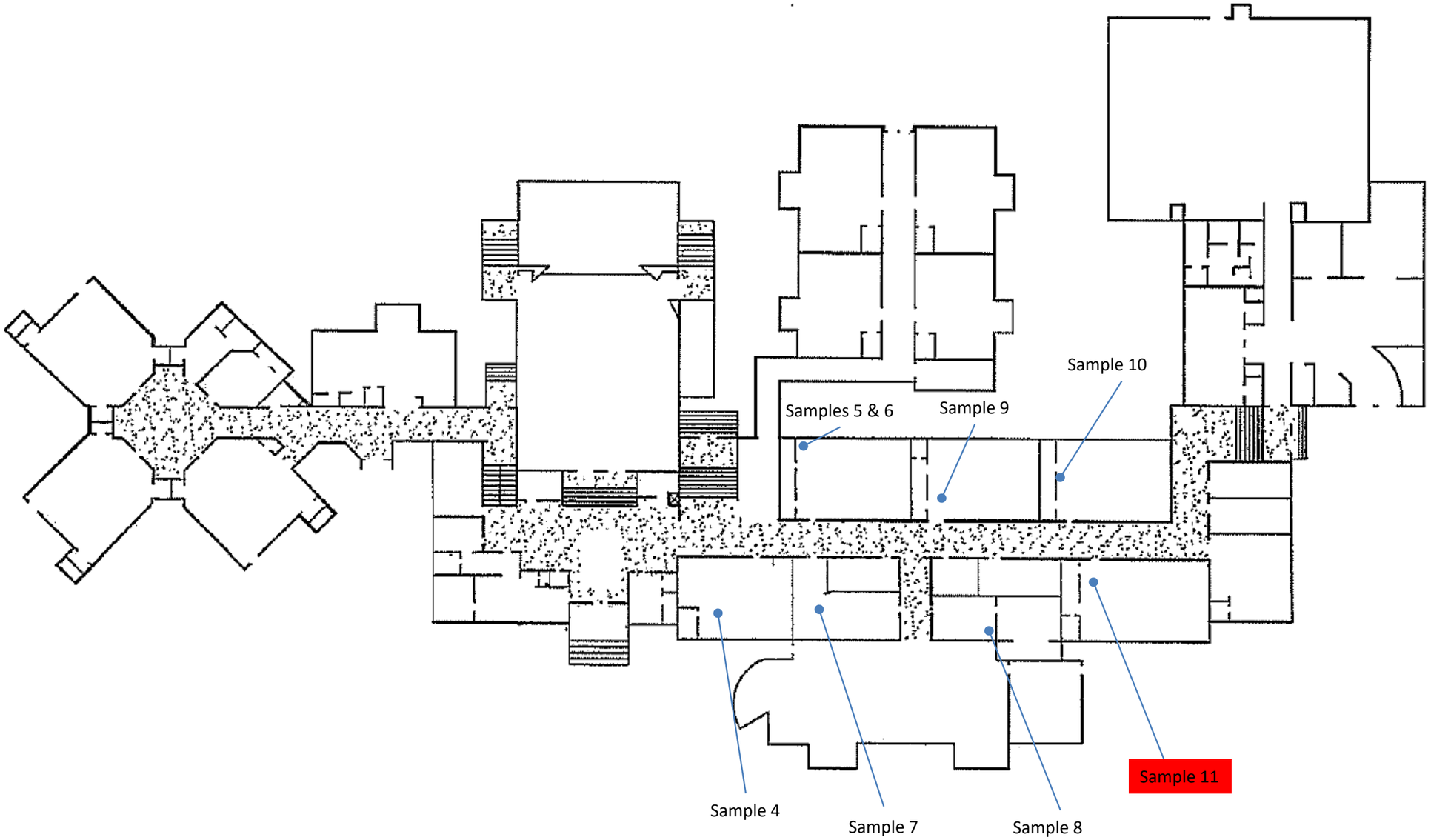
Charles Barrett Elementary School
1115 Martha Custis Drive
Alexandria, VA 22302

Sample Location Sketch Basement Floor

Scale: NTS

Project No.
47:11652-E

Site Visit:
06/07/21



Inaccessible Area

Elevated Lead

Elevated Copper

Elevated Lead & Copper

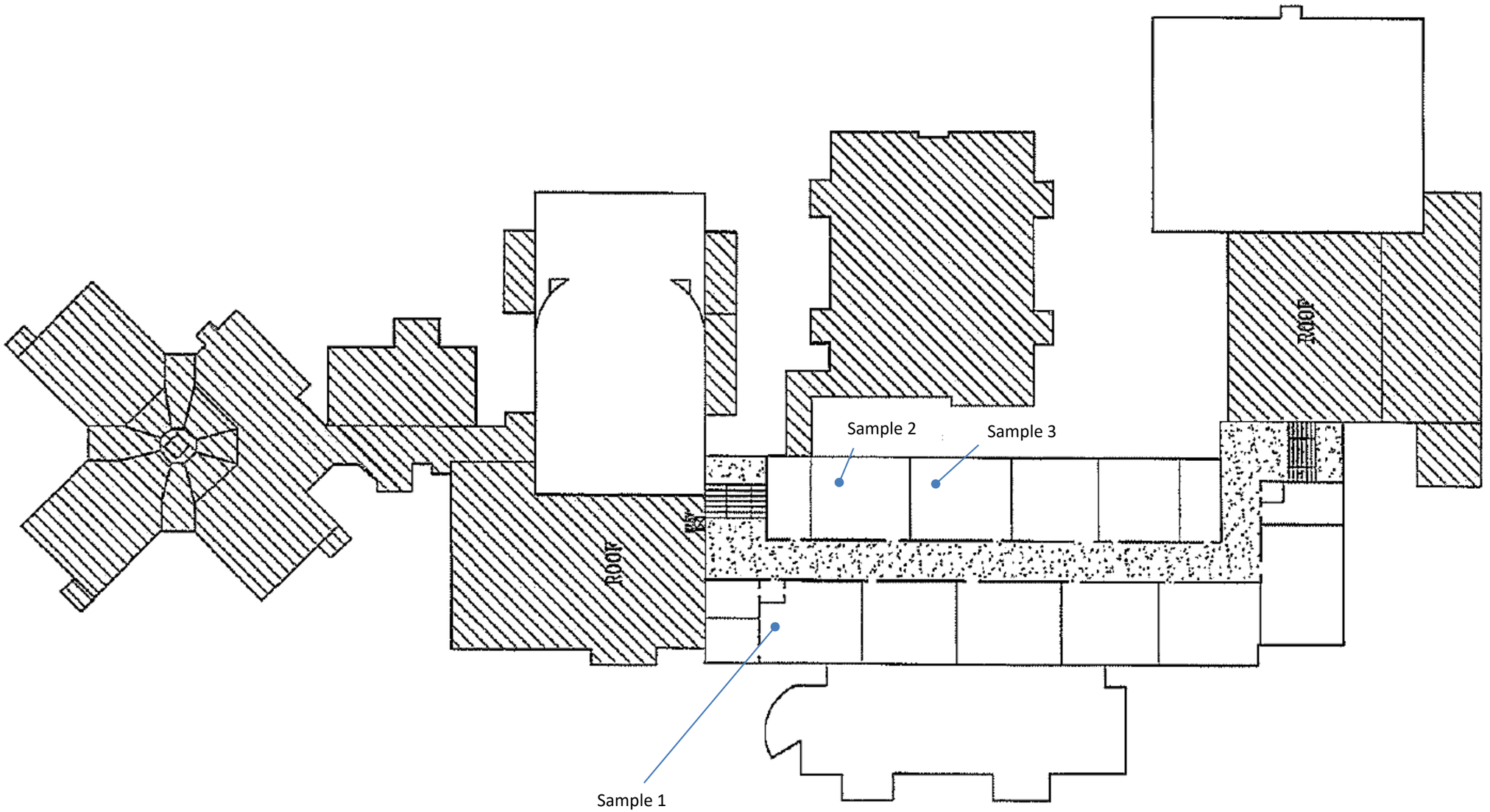
Charles Barrett Elementary School
1115 Martha Custis Drive
Alexandria, VA 22302

Sample Location Sketch First Floor

Scale: NTS

Project No.
47:11652-E

Site Visit:
06/07/21



Inaccessible Area

Elevated Lead

Elevated Copper

Elevated Lead & Copper

Charles Barrett Elementary School
1115 Martha Custis Drive
Alexandria, VA 22302

Sample Location Sketch Second Floor

Scale: NTS

Project No.
47:11652-E

Site Visit:
06/07/21

Appendix II: Lead and Copper Drinking Water Sample Results

Charles Barrett Elementary School
Alexandria City Public Schools
ECS Project No. 47:11652-E
Site Visit: June 7, 2021

Charles Barrett Elementary School Copper and Lead Drinking Water Results Table		
Sample Number	**Copper Result (mg/L)**	**Lead Result (mg/L)**
060721-CB-01-302S	0.190	<0.001
060721-CB-02-309S	0.166	0.004
060721-CB-03-310S	0.131	0.001
060721-CB-04-219BS	0.061	<0.001
060721-CB-05-221S	0.138	0.002
060721-CB-06-221B	0.077	0.001
060721-CB-07-224S	0.042	<0.001
060721-CB-08-LIBRARY	0.442	0.005
060721-CB-09-226B	0.024	0.004
060721-CB-10-227S	0.051	0.003
060721-CB-11-228B	0.426	**0.019**
060721-CB-12-KITCH LS	0.251	0.001
060721-CB-13-KITCH RS	0.233	<0.001
060721-CB-14-107S	0.223	0.001
The EPA's Lead and Copper Rule set an action level of 0.015 mg/L for lead and an action level of 1.3 mg/L for copper. Note these levels are related to public water systems (PWSs). The Code of Virginia requires school boards notify parents if testing results exceed 0.01 mg/L of Lead (Pb).		

Table Notes:
Red = Above the Action Level
Orange = Above 0.010 mg/L and below 0.015 mg/L

Appendix III: Laboratory Report(s)

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

15 June 2021

Michael Hamill
ECS-Chantilly
14026 Thunderbolt Place, Suite 100
Chantilly, VA 20151
RE: ACPS WATER SAMPLING

Enclosed are the results of analyses for samples received by the laboratory on 06/07/21 13:43.

Maryland Spectral Services, Inc. is a TNI 2009 Standard accredited laboratory and as such, all analyses performed at Maryland Spectral Services included in this report are 2009 TNI certified except as indicated at the end of this report. Please visit our website at www.mdspectral.com for a complete listing of our TNI 2009 Standard accreditations.

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

Sincerely,

Will Brewington
President

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: ACPS WATER SAMPLING

Project Number: 47:11653-E
Project Manager: Michael Hamill

Reported:
06/15/21 12:33

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
060721-CB-01-302S		1060704-01	Drinking Water	06/07/21 00:00	06/07/21 13:43
060721-CB-02-309S		1060704-02	Drinking Water	06/07/21 00:00	06/07/21 13:43
060721-CB-03-310S		1060704-03	Drinking Water	06/07/21 00:00	06/07/21 13:43
060721-CB-04-219BS		1060704-04	Drinking Water	06/07/21 00:00	06/07/21 13:43
060721-CB-05-221S		1060704-05	Drinking Water	06/07/21 00:00	06/07/21 13:43
060721-CB-06-221B		1060704-06	Drinking Water	06/07/21 00:00	06/07/21 13:43
060721-CB-07-224S		1060704-07	Drinking Water	06/07/21 00:00	06/07/21 13:43
060721-CB-08-LIBRARY		1060704-08	Drinking Water	06/07/21 00:00	06/07/21 13:43
060721-CB-09-226B		1060704-09	Drinking Water	06/07/21 00:00	06/07/21 13:43
060721-CB-10-227S		1060704-10	Drinking Water	06/07/21 00:00	06/07/21 13:43
060721-CB-11-228B		1060704-11	Drinking Water	06/07/21 00:00	06/07/21 13:43
060721-CB-12-KITCH LS		1060704-12	Drinking Water	06/07/21 00:00	06/07/21 13:43
060721-CB-13-KITCH RS		1060704-13	Drinking Water	06/07/21 00:00	06/07/21 13:43
060721-CB-14-107S		1060704-14	Drinking Water	06/07/21 00:00	06/07/21 13:43

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, President

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report.

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: ACPS WATER SAMPLING

Project Number: 47:11653-E
Project Manager: Michael Hamill

Reported:
06/15/21 12:33

060721-CB-01-302S

1060704-01 (Drinking Water)
Sample Date: 06/07/21

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Total Metals Analysis by EPA 200.8DW Prepared by 200.8-No Digestion Metals									
Copper	**190**		ug/L	1.00	1.00	1	06/11/21	06/11/21 13:53	CWK
Lead	ND		ug/L	1.00	1.00	1	06/11/21	06/11/21 13:53	CWK

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, President

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report.

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: ACPS WATER SAMPLING

Project Number: 47:11653-E
Project Manager: Michael Hamill

Reported:
06/15/21 12:33

060721-CB-02-309S

1060704-02 (Drinking Water)
Sample Date: 06/07/21

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Total Metals Analysis by EPA 200.8DW Prepared by 200.8-No Digestion Metals									
Copper	**166**		ug/L	1.00	1.00	1	06/11/21	06/11/21 13:56	CWK
Lead	**3.81**		ug/L	1.00	1.00	1	06/11/21	06/11/21 13:56	CWK

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, President

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report.

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: ACPS WATER SAMPLING

Project Number: 47:11653-E
Project Manager: Michael Hamill

Reported:
06/15/21 12:33

060721-CB-03-310S

1060704-03 (Drinking Water)
Sample Date: 06/07/21

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Total Metals Analysis by EPA 200.8DW Prepared by 200.8-No Digestion Metals									
Copper	**131**		ug/L	1.00	1.00	1	06/11/21	06/11/21 13:58	CWK
Lead	**1.04**		ug/L	1.00	1.00	1	06/11/21	06/11/21 13:58	CWK

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, President

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report.

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: ACPS WATER SAMPLING

Project Number: 47:11653-E
Project Manager: Michael Hamill

Reported:
06/15/21 12:33

060721-CB-04-219BS

1060704-04 (Drinking Water)
Sample Date: 06/07/21

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Total Metals Analysis by EPA 200.8DW Prepared by 200.8-No Digestion Metals									
Copper	**60.9**		ug/L	1.00	1.00	1	06/11/21	06/11/21 14:00	CWK
Lead	ND		ug/L	1.00	1.00	1	06/11/21	06/11/21 14:00	CWK

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, President

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report.

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: ACPS WATER SAMPLING

Project Number: 47:11653-E
Project Manager: Michael Hamill

Reported:
06/15/21 12:33

060721-CB-05-221S

1060704-05 (Drinking Water)
Sample Date: 06/07/21

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Total Metals Analysis by EPA 200.8DW Prepared by 200.8-No Digestion Metals									
Copper	**138**		ug/L	1.00	1.00	1	06/11/21	06/11/21 14:08	CWK
Lead	**2.01**		ug/L	1.00	1.00	1	06/11/21	06/11/21 14:08	CWK

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, President

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report.

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: ACPS WATER SAMPLING

Project Number: 47:11653-E
Project Manager: Michael Hamill

Reported:
06/15/21 12:33

060721-CB-06-221B

1060704-06 (Drinking Water)
Sample Date: 06/07/21

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Total Metals Analysis by EPA 200.8DW Prepared by 200.8-No Digestion Metals									
Copper	**76.8**		ug/L	1.00	1.00	1	06/11/21	06/11/21 14:10	CWK
Lead	**1.22**		ug/L	1.00	1.00	1	06/11/21	06/11/21 14:10	CWK

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, President

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report.

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: ACPS WATER SAMPLING

Project Number: 47:11653-E
Project Manager: Michael Hamill

Reported:
06/15/21 12:33

060721-CB-07-224S

1060704-07 (Drinking Water)
Sample Date: 06/07/21

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Total Metals Analysis by EPA 200.8DW Prepared by 200.8-No Digestion Metals									
Copper	**42.3**		ug/L	1.00	1.00	1	06/11/21	06/11/21 14:22	CWK
Lead	ND		ug/L	1.00	1.00	1	06/11/21	06/11/21 14:22	CWK

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, President

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report.

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: ACPS WATER SAMPLING

Project Number: 47:11653-E
Project Manager: Michael Hamill

Reported:
06/15/21 12:33

060721-CB-08-LIBRARY

1060704-08 (Drinking Water)
Sample Date: 06/07/21

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Total Metals Analysis by EPA 200.8DW Prepared by 200.8-No Digestion Metals									
Copper	**442**		ug/L	1.00	1.00	1	06/11/21	06/11/21 14:25	CWK
Lead	**4.75**		ug/L	1.00	1.00	1	06/11/21	06/11/21 14:25	CWK

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, President

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report.

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: ACPS WATER SAMPLING

Project Number: 47:11653-E
Project Manager: Michael Hamill

Reported:
06/15/21 12:33

060721-CB-09-226B

1060704-09 (Drinking Water)
Sample Date: 06/07/21

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Total Metals Analysis by EPA 200.8DW Prepared by 200.8-No Digestion Metals									
Copper	**24.0**		ug/L	1.00	1.00	1	06/11/21	06/11/21 14:27	CWK
Lead	**3.90**		ug/L	1.00	1.00	1	06/11/21	06/11/21 14:27	CWK

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, President

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report.

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: ACPS WATER SAMPLING

Project Number: 47:11653-E
Project Manager: Michael Hamill

Reported:
06/15/21 12:33

060721-CB-10-227S

1060704-10 (Drinking Water)
Sample Date: 06/07/21

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Total Metals Analysis by EPA 200.8DW Prepared by 200.8-No Digestion Metals									
Copper	**51.0**		ug/L	1.00	1.00	1	06/11/21	06/11/21 14:30	CWK
Lead	**3.19**		ug/L	1.00	1.00	1	06/11/21	06/11/21 14:30	CWK

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, President

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report.

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: ACPS WATER SAMPLING

Project Number: 47:11653-E
Project Manager: Michael Hamill

Reported:
06/15/21 12:33

060721-CB-11-228B

1060704-11 (Drinking Water)
Sample Date: 06/07/21

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Total Metals Analysis by EPA 200.8DW Prepared by 200.2-Digested Metals									
Copper	**426**		ug/L	1.00	1.00	1	06/08/21	06/11/21 15:23	CWK
Lead	**18.5**		ug/L	1.00	1.00	1	06/08/21	06/11/21 15:23	CWK

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, President

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report.

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: ACPS WATER SAMPLING

Project Number: 47:11653-E
Project Manager: Michael Hamill

Reported:
06/15/21 12:33

060721-CB-12-KITCH LS

1060704-12 (Drinking Water)
Sample Date: 06/07/21

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Total Metals Analysis by EPA 200.8DW Prepared by 200.8-No Digestion Metals									
Copper	**251**		ug/L	1.00	1.00	1	06/11/21	06/11/21 14:37	CWK
Lead	**1.10**		ug/L	1.00	1.00	1	06/11/21	06/11/21 14:37	CWK

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, President

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report.

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: ACPS WATER SAMPLING

Project Number: 47:11653-E
Project Manager: Michael Hamill

Reported:
06/15/21 12:33

060721-CB-13-KITCH RS

1060704-13 (Drinking Water)
Sample Date: 06/07/21

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Total Metals Analysis by EPA 200.8DW Prepared by 200.8-No Digestion Metals									
Copper	**233**		ug/L	1.00	1.00	1	06/11/21	06/11/21 14:39	CWK
Lead	ND		ug/L	1.00	1.00	1	06/11/21	06/11/21 14:39	CWK

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, President

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report.

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: ACPS WATER SAMPLING

Project Number: 47:11653-E
Project Manager: Michael Hamill

Reported:
06/15/21 12:33

060721-CB-14-107S

1060704-14 (Drinking Water)
Sample Date: 06/07/21

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Detection Limit (LOD)	Dilution	Prepared	Analyzed	Analyst
Total Metals Analysis by EPA 200.8DW Prepared by 200.8-No Digestion Metals									
Copper	**223**		ug/L	1.00	1.00	1	06/11/21	06/11/21 14:42	CWK
Lead	**1.01**		ug/L	1.00	1.00	1	06/11/21	06/11/21 14:42	CWK

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, President

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report.

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: ACPS WATER SAMPLING

Project Number: 47:11653-E
Project Manager: Michael Hamill

Reported:
06/15/21 12:33

Notes and Definitions

QM-4X	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
%-Solids	Percent Solids is a supportive test and as such does not require accreditation

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, President

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report.

-Atlantc	Project Manager: Michael Hamill	
s Water Sampling	Project ID: 47:11653-E	
Sampler(s): MPH /CGB	P.O. Number: 47:11653-E	

CHAIN-OF-CUSTODY RECORD

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
reporting@mdspectral.com

Matrix Codes: NW (non-potable water), DW (drinking water)

Analysis Requested

Field Sample ID	Date	Time	DW	Water	Soil	Other	No. of Containers	Lead (200-8DW-Pb)	Copper (200-8DW-Cu)									Preservative	Field Notes	MSS Lab ID
060721CB-01-302S	6/7/21			X			1	X	X									HNO_3		1060704-01
060721CB-02-309S	6/7/21			X			1	X	X									HNO_3		-02
060721CB-03-310S	6/7/21			X			1	X	X									HNO_3		-03
060721CB-04-219BS	6/7/21			X			1	X	X									HNO_3		-04
060721CB-05-221S	6/7/21			X			1	X	X									HNO_3		-05
060721CB-06-221B	6/7/21			X			1	X	X									HNO_3		-06
060721CB-07-224S	6/7/21			X			1	X	X									HNO_3		-07
060721CB-08-library	6/7/21			X			1	X	X									HNO_3		-08
060721CB-09-226B	6/7/21			X			1	X	X									HNO_3		-09
060721CB-10-227S	6/7/21			X			1	X	X									HNO_3		-10

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
CBourne	6/7/21				
(Printed) Catey Bourne		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)
	13:43	[signature]
(Printed)	6-7-21	(Printed) Lori Foster

Turn Around Time:
- ☐ Normal (7 day)
- ☐ 5 day
- ☐ 4 day
- ☐ 3 day
- ☐ Rush (2 day)
- ☐ Next Day
- ☐ Other: _____
- ☐ Specific Due Date: ______

Lab Use:
Temp: ____°C 25.2
- ☐ Received on Ice
- ☒ Received same day

Delivery Method:
- ☒ Courier
- ☐ Client
- ☐ UPS
- ☐ FedEx
- ☐ USPS
- ☐ Other:_____

Special Instructions/QC Requirements & Comments:

Sample Disposal:
- ☐ Return to Client
- ☐ Disposal by lab
- ☐ Archive for _____ days

Company Name:	Project Manager:
ECS Mid-Atlantic	Michael Hamill
Project Name:	Project ID:
ACPS Water Sampling	47:11653-E
Sampler(s):	P.O. Number:
MPH / CGB	47:11653-E

CHAIN-OF-CUSTODY RECORD

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410-247-7600 • Fax 410-247-7602
reporting@mdspectral.com

Matrix Codes: NW (non-potable water), DW (drinking water)

Field Sample ID	Date	Time	Matrix: DW	Matrix: Water	Matrix: Soil	Matrix: Other	No. of Containers	Analysis Requested: Lead (200.8 SDW-Pb)	Analysis Requested: Copper (200.8 SDW-Cu)	Preservative	Field Notes	MSS Lab ID
060721CB-11 - 228B	6/7/21			X			1	X	X	HNO_3		1060704-11
060721CB-12 - Kitch LS	6/7/21			X			1	X	X	HNO_3		-12
060721CB-13 - Kitch RS	6/7/21			X			1	X	X	HNO_3		-13
060721CB-14 1075	6/7/21			X			1	X	X	HNO_3		-14
										~~HNO_3~~		
										~~HNO_3~~		

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
(Printed) Catey Bourne	6/7/21	(Printed)	(Printed)		(Printed)
Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)			
(Printed)	13:43 6-7-21	(Printed) Lori Foster			

Turn Around Time:
- ☒ Normal (7 day)
- ☐ 5 day
- ☐ 4 day
- ☐ 3 day
- ☐ Rush (2 day)
- ☐ Next Day
- ☐ Other: _____
- ☐ Specific Due Date: _____

Lab Use:
Temp: 25.2 °C
- ☐ Received on Ice
- ☒ Received same day

Delivery Method:
- ☐ Courier
- ☐ Client
- ☐ UPS
- ☐ FedEx
- ☐ USPS
- ☐ Other: _____

Special Instructions/QC Requirements & Comments:

Sample Disposal:
- ☐ Return to Client
- ☐ Disposal by lab
- ☐ Archive for _____ days

Appendix IV: List of Previous Reports

List of Previous Reports:

- 47:1519-K APCS Charles Barrett Elementary School Lead and Copper Drinking Water Sampling Report dated January 29, 2020

- 47:1519-K Charles Barrett Lead and Copper Drinking Water October 2020 Resampling Report dated October 29, 2020

- 47:1519-K1 Charles Barrett Lead Drinking Water January 2021 Resampling dated February 9, 2021