Columbus

Cleveland

Dayton

August 18, 2016

Mr. Tim Gehring Director of Facilities Management Worthington City School District 250 East Wilson Bridge Road Worthington, Ohio 43085

Re: Lead in Water Testing at Brookside Elementary School

6700 McVey Boulevard, Worthington, OH

Sample Date: June 17, 2016 L&A Project No: 16-0311

Dear Mr. Gehring,

Lawhon & Associates, Inc. (L&A) performed water sampling to document concentrations of lead in the potable water system. There is no federal law requiring testing of drinking water in schools, except for schools that have their own water supply and are thus regulated under the Safe Drinking Water Act (SDWA). This testing was performed as a proactive measure to ensure lead concentrations in drinking water remain at acceptable levels. L&A's conclusions and recommendations relevant to the sampling performed are presented in this document.

#### **METHODOLOGY**

L&A performed environmental sampling for lead in water at Brookside Elementary School on June 17, 2016. The sampling was conducted in accordance with the United States Environmental Protection Agency's (US EPA) guidance document "3Ts (Training, Testing, and Telling) for Reducing Lead in Drinking Water in Schools" (3Ts Guidance); however, a larger sample volume was collected due to laboratory requirements for Ohio EPA certified methods. A sampling plan was developed for the facility, which prioritized drinking water sources based on potential use and risk. Field activities included the collection of one (1) liter water samples from the first outlet off the water main, drinking fountains, kitchen sinks, and approximately 10% of classroom sinks or other potential drinking water sources. Both first draw and flush samples were collected at each location. Prior to sample collection, the potable water system was not used for a minimum of 8 hours. Samples were collected by Mr. Shawen Jenkins, Ohio Department of Health (ODH) certified Lead Risk Assessor (LRA) #LA9297. First draw samples were submitted to MASI Environmental Laboratories located in Plain City, Ohio for analysis using the EPA method SM 3113B. MASI is certified by the Ohio EPA for lead in drinking water analysis. Flushed samples were held at the L&A office and submitted for analysis only if the first draw sample from the same fixture exceeded the US EPA Action Level.

#### **REGULATORY ACTION LEVELS**

US EPA's 3T's Guidance recommends an action level of 20 parts per billion (ppb) for lead; however, Ohio Facilities Construction Commission (OFCC) Lead Plumbing Fixture Replacement Assistance Grants Program has set an action level of 15 ppb for lead which is consistent with

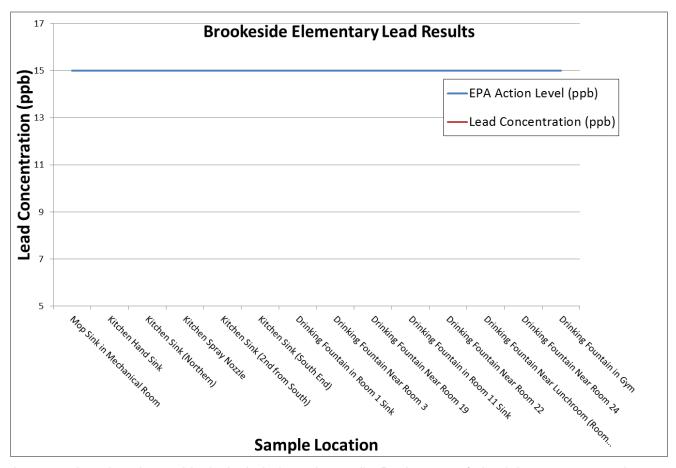
1441 King Avenue | Columbus, Ohio 43212 | P:614.481.8600 | F:614.481.8610 | www.lawhon-assoc.com

the action level for lead set by EPA's Lead and Copper Rule, under the National Primary Drinking Water Regulations (NPDWR).

For the purposes of this assessment, L&A has utilized an action level of 15 ppb lead for comparison with the laboratory analytical results.

#### **FINDINGS**

L&A collected 14 first draw water samples at Brookside Elementary School for laboratory analysis. A diagram of the sampling locations is presented in Appendix A. As illustrated in the following figure, lead was not detected in any sampling locations.



A comprehensive data table is included as Appendix B. A copy of the laboratory report is included in Appendix C.

#### CONCLUSIONS

The results of L&A's sampling indicate lead concentrations were below the detection limit of 5 ppb and thus did not exceed the action level in all sample locations. No further action is recommended at this time.

## **CLOSURE**

L&A has prepared this report for your use in accordance with generally accepted inspection and testing practices. The information obtained in this report is site and time specific and pertains to this project only. This inspection evaluated the conditions that were readily accessible at the time of the investigation of the subject property and does not warrant against hidden conditions or future alteration of conditions at the site, as well as subsequent changes in regulations. This

report is not to be construed as a full Lead Risk Assessment.

This report was prepared for the exclusive use of the Worthington City School District. No other party may rely on this report unless expressly designated by the Client in writing. The use of the report is subject to the limitations and exceptions set forth in this report, as well as the terms and conditions contained in the original contract documents. L&A will not distribute or publish this report without the Client's consent, except as required by law or court order.

Thank you for the opportunity to assist you in this important matter. If you have any questions concerning this report, please contact Shawen Jenkins or Tim Price at (614) 481-8600. Sincerely,

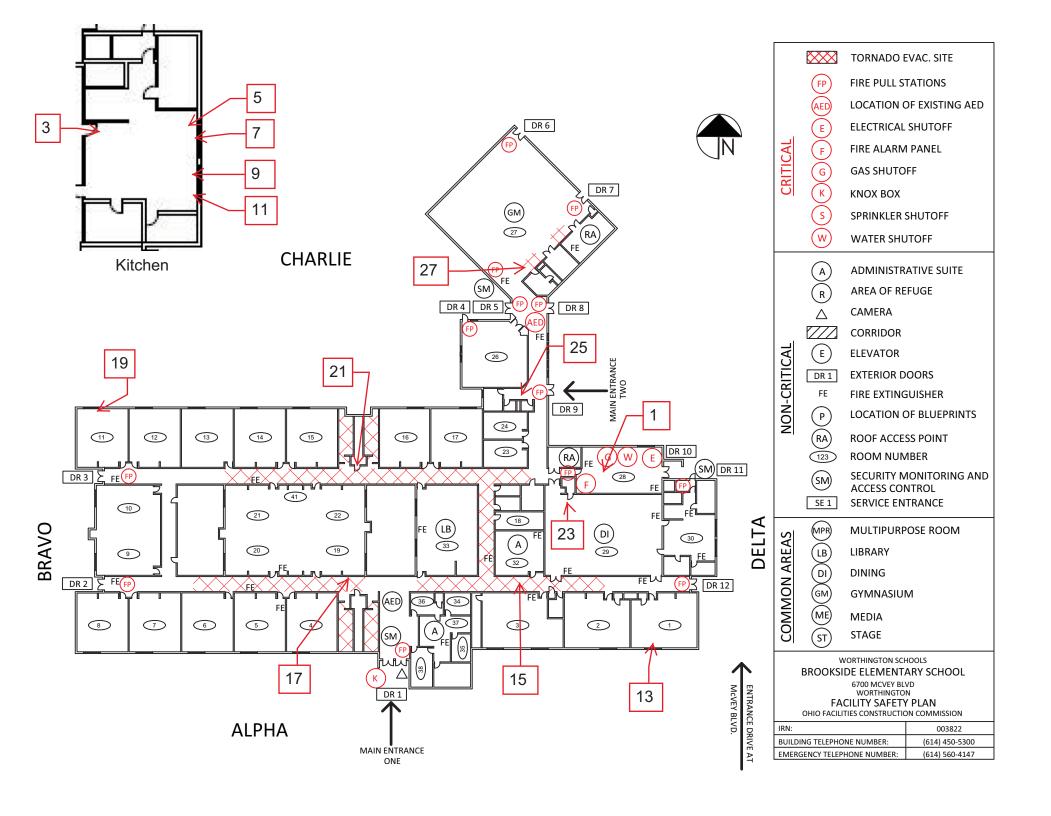
Shawen Jenkins

Environmental Scientist / Lead Risk Assessor

Tim Price Senior Project Manager

# **APPENDIX A**

**Sample Location Diagram** 



## **APPENDIX B**

**Comprehensive Data Table** 

**Table 1: Potable Water Sampling Results** 

Sample ID	Sampling Site	Sample Type	Meets Non-Use Period	Recalled Fixture?	Analytical Results (ppb)
BSE-1	Mop Sink in Mechanical Room	First Draw	Yes	No	<5.0
BSE-3	Kitchen Hand Sink	First Draw	Yes	No	<5.0
BSE-5	Kitchen Sink (Northern)	First Draw	Yes	No	<5.0
BSE-7	Kitchen Spray Nozzle	First Draw	Yes	No	<5.0
BSE-9	Kitchen Sink (2nd from South)	First Draw	Yes	No	<5.0
BSE-11	Kitchen Sink (South End)	First Draw	Yes	No	<5.0
BSE-13	Drinking Fountain in Room 1 Sink	First Draw	Yes	No	<5.0
BSE-15	Drinking Fountain Near Room 3	First Draw	Yes	No	<5.0
BSE-17	Drinking Fountain Near Room 19	First Draw	Yes	No	<5.0
BSE-19	Drinking Fountain in Room 11 Sink	First Draw	Yes	No	<5.0
BSE-21	Drinking Fountain Near Room 22	First Draw	Yes	No	<5.0
BSE-23	Drinking Fountain Near Lunchroom (Room 29)	First Draw	Yes	No	<5.0
BSE-25	Drinking Fountain Near Room 24	First Draw	Yes	No	<5.0
BSE-27	Drinking Fountain in Gym	First Draw	Yes	No	<5.0

<sup>1.</sup> Detection limit is 5.0 ppb.

<sup>2.</sup> Bold indicates lead present above detection limits.

<sup>3.</sup> Highlighting indicates lead concentrations exceed the EPA Action Level.

# **APPENDIX C**

**Laboratory Analytical Reports** 

MASI ENVIRONMENTAL SERVICES

P. O. Box 1440 Dublin, Ohio 43017 (614) 873-4654

> Page: 1 Date: 06/23/16

LAWHON & ASSOCIATES, INC. CHUCK WILSON

1441 KING AVENUE

COLUMBUS OH 43212

Client No: 0000005911 AR Sheet No: 0415428-AR MASI Dublin Laboratory: 877 MASI Cincinnati Laboratory: 4100

PWS ID No:

STU ID No: PO No:

Dear Client:

Along with your results listed below we would like to thank you for allowing MASI to assist you with your environmental testing requirements.

Account Name: LAWHON & ASSOCIATES, INC. Private

Sampler Name: SHAWEN JENKINS County: FRANKLIN

Sample Date: 06/17/16 Chlorinated: Sample Time: 07:15 Repeat No: Sample Matrix: POTABLE C12 Total: Sample Monitoring Point: C12 Free: Sample Tap: MDP MECH RM SHOP SINK C12 Combined:

Sample Type:

Sample Address: BROOKSIDE ELEM 6700 MCVEY BLVD WORTHINGTON BSE-1

Sample ID:

\_\_\_\_ Lab Method Analyst Date Number Number Analyzed Test Requested

Test Result 

LEAD 44395 3113B 4792 06/22/16

<5.0 uq/l

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> Page: 1 Date: 06/23/16

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1441 KING AVENUE

COLUMBUS OH 43212

Client No: 0000005911 AR Sheet No: 0415430-mm MASI Dublin Laboratory: 877

PWS ID No:

STU ID No: PO No:

Dear Client:

Along with your results listed below we would like to thank you for allowing MASI to assist you with your environmental testing requirements.

Account Name: LAWHON & ASSOCIATES, INC. Private

Sampler Name: SHAWEN JENKINS County: FRANKLIN

Sample Date: 06/17/16 Chlorinated: Sample Time: 07:17 Repeat No: Sample Matrix: POTABLE C12 Total: C12 Free: Sample Monitoring Point: Sample Tap: KITCHEN HAND SINK C12 Combined:

Sample Type:

Sample Address: BROOKSIDE ELEMENTARY 6700 MCVEY BSE-3

Sample ID:

\_\_\_\_ Lab Method Analyst Date Number Number Number Analyzed Test Requested

Test Result 

LEAD 44398 3113B 4792 06/22/16

<5.0 uq/l

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> Page: 1 Date: 06/23/16

> > 0000005911

LAWHON & ASSOCIATES, INC. CHUCK WILSON

1441 KING AVENUE

AR Sheet No: 0415452 mm.
MASI Dublin Laboratory: 877

Client No:

COLUMBUS OH 43212 PWS ID No: STU ID No:

PO No:

Dear Client:

Along with your results listed below we would like to thank you for allowing MASI to assist you with your environmental testing requirements.

Account Name: LAWHON & ASSOCIATES, INC. Private

Sampler Name: SHAWEN JENKINS County: FRANKLIN

Sample Date: 06/17/16 Chlorinated: Sample Time: 07:22 Repeat No: Sample Matrix: POTABLE C12 Total: Sample Monitoring Point: C12 Free: Sample Tap: KITCHEN SINK NORTH C12 Combined:

Sample Type:

Sample Address: BROOKSIDE ELM 6700 MCVEY BLVD WORTHINGTON BSE-5

Sample ID:

\_\_\_\_ Lab Method Analyst Date Number Number Number Analyzed Test Requested

Test Result 

LEAD 44413 3113B 4792 06/22/16

<5.0 uq/l

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> Page: Date: 06/23/16

LAWHON & ASSOCIATES, INC. CHUCK WILSON 1441 KING AVENUE

COLUMBUS OH 43212

Client No: 0000005911 AR Sheet No: 0415434-AR
MASI Dublin Laboratory: 877

PWS ID No:

County: FRANKLIN

Chlorinated:

C12 Combined:

Repeat No:

C12 Total: C12 Free:

STU ID No:

Private

Dear Client:

PO No:

Along with your results listed below we would like to thank you for allowing MASI to assist you with your environmental testing requirements.

Account Name: LAWHON & ASSOCIATES, INC.

Sampler Name: SHAWEN JENKINS

Sample Date: 06/17/16 Sample Time: 07:26 Sample Matrix: POTABLE Sample Monitoring Point: Sample Tap: KITCHEN SPRAYER

Sample Type:

Sample Address: BROOKSIDE ELM 6700 MCVEY BLVD WORTHINGTON BSE-7

Sample ID:

Lab Metho**d** Analyst Date Number Number Number Analyze**d** Test Requested Test Result 

LEAD 44425 3113B 4792 06/22/16 <5.0 u**g**/1

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> Page: 1 Date: 06/23/16

LAWHON & ASSOCIATES, INC. CHUCK WILSON

1441 KING AVENUE

COLUMBUS OH 43212

Client No: 0000005911 AR Sheet No: 0415430-mm MASI Dublin Laboratory: 877

PWS ID No:

STU ID No: PO No:

Dear Client:

Along with your results listed below we would like to thank you for allowing MASI to assist you with your environmental testing requirements.

Account Name: LAWHON & ASSOCIATES, INC. Private

Sampler Name: SHAWEN JENKINS County: FRANKLIN

Sample Date: 06/17/16 Chlorinated: Sample Time: 07:30 Repeat No: Sample Matrix: POTABLE C12 Total: Sample Monitoring Point: C12 Free: C12 Combined:

Sample Tap: KITCHEN SINK 2ND FROM

Sample Type:

Sample Address: SOUTH BROOKSIDE ELM 6700 MCVEY BLVD WORTHINGTON

Sample ID: BSE-9

Test Requested

Lab Method Analyst Date Number Number Analyzed Test Result

LEAD 44437 3113B 4792 06/22/16 <5.0 uq/l

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> Page: 1 Date: 06/23/16

LAWHON & ASSOCIATES, INC. CHUCK WILSON

1441 KING AVENUE

COLUMBUS OH 43212

Client No: 0000005911 AR Sheet No: 0415430 mm.
MASI Dublin Laboratory: 877

PWS ID No:

STU ID No: PO No:

Dear Client:

Along with your results listed below we would like to thank you for allowing MASI to assist you with your environmental testing requirements.

Account Name: LAWHON & ASSOCIATES, INC. Private

Sampler Name: SHAWEN JENKINS County: FRANKLIN

Sample Date: 06/17/16 Chlorinated: Sample Time: 07:34 Repeat No: Sample Matrix: POTABLE C12 Total: Sample Monitoring Point: C12 Free: Sample Tap: KITCHEN SINK SOUTH END C12 Combined:

Sample Type:

Sample Address: BROOKSIDE ELM 6700 MCVEY BLVD WORTHINGTON BSE-11

Sample ID:

\_\_\_\_ Lab Method Analyst Date Number Number Number Analyzed Test Requested

Test Result 

LEAD 44446 3113B 4792 06/22/16

<5.0 uq/l

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> Page: 1 Date: 06/23/16

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LAWHON & ASSOCIATES, INC. CHUCK WILSON 1441 KING AVENUE

COLUMBUS OH 43212

AR Sheet No: 0415440-AR MASI Dublin Laboratory: 877 MASI Cincinnati Laboratory: 4100

PWS ID No:

Client No:

STU ID No: PO No:

Dear Client:

Along with your results listed below we would like to thank you for allowing MASI to assist you with your environmental testing requirements.

Account Name: LAWHON & ASSOCIATES, INC. Private

Sampler Name: SHAWEN JENKINS County: FRANKLIN Sample Date: 06/17/16 Chlorinated:

Sample Date: 06/17/16 Chlorinated:
Sample Time: 07:38 Repeat No:
Sample Matrix: POTABLE C12 Total:
Sample Monitoring Point: C12 Free:
Sample Tap: RM 1 SINK DF C12 Combined:

Sample Type:

Sample Address: BROOKSIDE ELEM 6700 MCVEY BLVD WORTHINGTON BSE-13

Sample ID:

Test Requested Lab Method Analyst Date
Test Result Number Number Number Analyzed

LEAD 44381 3113B 4792 06/22/16

<5.0 u¶/1

MASI ENVIRONMENTAL SERVICES

P. O. Box 1440 Dublin, Ohio 43017 (614) 873-4654

> Page: 1 Date: 06/23/16

LAWHON & ASSOCIATES, INC. CHUCK WILSON

1441 KING AVENUE

COLUMBUS OH 43212

Client No: 0000005911 AR Sheet No: 0415442-AR MASI Dublin Laboratory: 877

MASI Cincinnati Laboratory: 4100

PWS ID No:

STU ID No: PO No:

Dear Client:

Along with your results listed below we would like to thank you for allowing MASI to assist you with your environmental testing requirements.

Account Name: LAWHON & ASSOCIATES, INC. Private

Sampler Name: SHAWEN JENKINS County: FRANKLIN

Sample Date: 06/17/16 Chlorinated: Sample Time: 07:40 Repeat No: Sample Matrix: POTABLE C12 Total: Sample Monitoring Point: C12 Free: Sample Tap: DF NEAR RM 3 C12 Combined:

Sample Type:

Sample Address: BROOKSIDE ELEM 6700 MCVEY BLVD WORTHINGTON BSE 15

Sample ID:

<5.0 uq/l

\_\_\_\_ Test Requested

Lab Method Analyst Date Number Number Analyzed Test Result 

LEAD 44371 3113B 4792 06/22/16

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> Page: Date: 06/23/16

LAWHON & ASSOCIATES, INC. CHUCK WILSON

1441 KING AVENUE

COLUMBUS OH 43212

Client No: 0000005911 AR Sheet No: 0415444-nn MASI Dublin Laboratory: 877

PWS ID No:

STU ID No: PO No:

Dear Client:

Along with your results listed below we would like to thank you for allowing MASI to assist you with your environmental testing requirements.

Account Name: LAWHON & ASSOCIATES, INC. Private

Sampler Name: SHAWEN JENKINS County: FRANKLIN

Sample Date: 06/17/16 Chlorinated: Sample Time: 07:44 Repeat No: Sample Matrix: POTABLE C12 Total: C12 Free: Sample Monitoring Point: Sample Tap: DF NEAR RM 19 C12 Combined:

Sample Type:

Sample Address: BROOKSIDE ELEM 6700 MCVEY BLVD WORTHINGTON BSE-17

Sample ID:

Lab Metho**d** Analyst Date Number Number Number Analyze**d** Test Requested

Test Result 

LEAD 44517 3113B 4792 06/22/16

<5.0 u**g**/1

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> Page: 1 Date: 06/23/16

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COLUMBUS OH 43212

Client No: 0000005911 AR Sheet No: 0415446-AR MASI Dublin Laboratory: 877

MASI Cincinnati Laboratory: 4100

PWS ID No:

STU ID No: PO No:

Dear Client:

Along with your results listed below we would like to thank you for allowing MASI to assist you with your environmental testing requirements.

Account Name: LAWHON & ASSOCIATES, INC. Private

Sampler Name: SHAWEN JENKINS County: FRANKLIN

Sample Date: 06/17/16 Chlorinated: Sample Time: 07:48 Repeat No: Sample Matrix: POTABLE C12 Total: Sample Monitoring Point: C12 Free: Sample Tap: RM 11 SINK DF C12 Combined:

Sample Type:

Sample Address: BROOKSIDE ELEM 6700 MCVEY BLVD WORTHINGTON BSE-19

Sample ID:

\_\_\_\_ Test Requested

Lab Method Analyst Date Number Number Analyzed Test Result 

LEAD 44520 3113B 4792 06/22/16

<5.0 uq/l

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LAWHON & ASSOCIATES, INC. CHUCK WILSON 1441 KING AVENUE

COLUMBUS OH 43212

AR Sheet No: 04154487711 MASI Dublin Laboratory: 877

County: FRANKLIN

PWS ID No:

Private

Client No:

STU ID No: PO No:

Dear Client:

Along with your results listed below we would like to thank you for allowing MASI to assist you with your environmental testing requirements.

Account Name: LAWHON & ASSOCIATES, INC.

Sampler Name: SHAWEN JENKINS

Sample Date: 06/17/16 Chlorinated: Sample Time: 07:52 Repeat No: Sample Matrix: POTABLE C12 Total: C12 Free: Sample Monitoring Point: Sample Tap: DF NEAR RM 22 C12 Combined:

Sample Type:

Sample Address: BROOKSIDE ELEM 6700 MCVEY BLVD WORTHINGTON BSE-21

Sample ID:

Lab Metho**d** Analyst Date Number Number Number Analyze**d** Test Requested Test Result 

LEAD 44525 3113B 4792 06/22/16

<5.0 u**g**/1

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> Page: 1 Date: 06/23/16

> > 0000005911

LAWHON & ASSOCIATES, INC. CHUCK WILSON 1441 KING AVENUE

COLUMBUS OH 43212

AR Sheet No: 0415450-AR
MASI Dublin Laboratory: 877
MASI Cincinnati Laboratory: 4100

PWS ID No:

Client No:

STU ID No: PO No:

Dear Client:

Along with your results listed below we would like to thank you for allowing MASI to assist you with your environmental testing requirements.

Account Name: LAWHON & ASSOCIATES, INC. Private

Sampler Name: SHAWEN JENKINS County: FRANKLIN

Sample Date: 06/17/16 Chlorinated:
Sample Time: 07:56 Repeat No:
Sample Matrix: POTABLE C12 Total:
Sample Monitoring Point: C12 Free:
Sample Tap: DF NEAR LUNCHROOM RM 29 C12 Combined:

Sample Type:

Sample Address: BROOKSIDE ELEM 6700 MCVEY BLVD WORTHINGTON BSE-23

Sample ID:

Test Degreeted Applied Date

Test Requested Lab Method Analyst Date Test Result Number Number Number Analyzed

LEAD 44528 3113B 4792 06/22/16

<5.0 ug/l

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> Page: 1 Date: 06/23/16

LAWHON & ASSOCIATES, INC. CHUCK WILSON

1441 KING AVENUE

COLUMBUS OH 43212

Client No: 0000005911 AR Sheet No: 0415452-AR MASI Dublin Laboratory: 877

County: FRANKLIN

Chlorinated:

C12 Combined:

Repeat No:

C12 Total:

C12 Free:

MASI Cincinnati Laboratory: 4100

PWS ID No:

Private

STU ID No: PO No:

Dear Client:

Along with your results listed below we would like to thank you for allowing MASI to assist you with your environmental testing requirements.

Account Name: LAWHON & ASSOCIATES, INC.

Sampler Name: SHAWEN JENKINS

Sample Date: 06/17/16 Sample Time: 08:00 Sample Matrix: POTABLE Sample Monitoring Point:

Sample Tap: DF NEAR RM 24

Sample Type:

Sample Address: BROOKSIDE ELEM 6700 MCVEY BLVD WORTHINGTON BSE-25

Sample ID:

\_\_\_\_ Lab Method Analyst Date Number Number Analyzed Test Requested

Test Result 

LEAD 44531 3113B 4792 06/22/16

<5.0 uq/l

MASI ENVIRONMENTAL SERVICES

P. O. Box 1440 Dublin, Ohio 43017 (614) 873-4654

> Page: 1 Date: 06/23/16

> > 0000005911

LAWHON & ASSOCIATES, INC. CHUCK WILSON

1441 KING AVENUE

COLUMBUS OH 43212

AR Sheet No: 0415454-AR MASI Dublin Laboratory: 877 MASI Cincinnati Laboratory: 4100

Client No:

PWS ID No:

STU ID No: PO No:

Dear Client:

Along with your results listed below we would like to thank you for allowing MASI to assist you with your environmental testing requirements.

Account Name: LAWHON & ASSOCIATES, INC. Private

Sampler Name: SHAWEN JENKINS County: FRANKLIN

Sample Date: 06/17/16 Chlorinated: Sample Time: 08:04 Repeat No: Sample Matrix: POTABLE C12 Total: Sample Monitoring Point: C12 Free: Sample Tap: DF IN GYM C12 Combined:

Sample Type:

Sample Address: BROOKSIDE ELEM 6700 MCVEY BLVD WORTHINGTON BSE-27

Sample ID:

\_\_\_\_

Lab Method Analyst Date Number Number Analyzed Test Requested Test Result 

LEAD 44534 3113B 4792 06/22/16 <5.0 uq/l