



Lawhon & Associates, Inc.

ENVIRONMENTAL CONSULTING AND ENGINEERING SERVICES

Columbus

Cleveland

Dayton

October 5, 2020

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

Re: Report of Findings for the *Legionella* Environmental Sampling
Facility: Worthington Estates Elementary School
Address: 6760 Rieber St, Worthington OH, 43065
Sample Date: September 17, 2020
L&A Project No: 20-0441

Dear Mr. Gehring,

Lawhon & Associates, Inc. (L&A) performed environmental sampling to document concentrations of *Legionella* in the building's domestic water system. This testing was performed as a proactive measure to ensure *Legionella* concentrations are at acceptable levels following a period of reduced occupancy. L&A's conclusions and recommendations relevant to the sampling performed are presented in this document.

METHODOLOGY

L&A performed environmental sampling for *Legionella* at the site on September 17, 2020. Field activities included a visual assessment of conditions, documentation of water temperatures and the collection of representative water samples for analysis to document *Legionella* concentrations. All activities were performed in accordance with recommendations published by OSHA, AIHA, CDC and current infection control literature. The samples were sent cold, by overnight mail, to U.S. Micro-Solutions, Inc, Greensburg, Pennsylvania for analysis by culture method. This lab is certified to perform *Legionella* analysis through the Centers for Disease Control (CDC) Environmental *Legionella* Isolation Techniques Evaluation (Elite) Certification Program. U.S. Micro-Solutions, Inc. is also accredited by the American Industrial Hygiene Association (AIHA) through the Environmental Microbiology Proficiency Analytical Testing (EMPAT) Program.

FINDINGS

L&A collected ten (10) water samples from the domestic water system on this date. A summary of the analytical results is presented in Table 1. The comprehensive data set is presented in Appendix A. A copy of the laboratory report is included as Appendix B.

Table 1: Domestic Water Sampling Results

Location	Fixture	Water Source	Analytical Data (CFU/ml)
Mechanical Room	Hot Water Tank	Hot	ND
Mechanical Room	Water Main	Cold	ND
Music Room	Faucet	Cold	5
Classroom 11	Faucet	Cold	ND
Classroom 5	Faucet	Cold	ND
Teacher Lounge	Faucet	Cold	ND
Kitchen	Faucet	Hot	ND
Boys Restroom	Faucet	Hot	ND
Classroom 6A	Faucet	Hot	ND
Nurse Room	Faucet	Hot	ND
<div><div>1. ND. <i>Legionella</i> species were not present above detection limits for the analytical method used.</div><div>2. OSHA recommends <i>Legionella</i> concentrations be maintained below 10 CFU/ml at domestic water outlets.</div></div>			

CONCLUSIONS

L&A conducted representative sampling of the domestic water system servicing the Worthington Estates Elementary School. As illustrated in Table 1, analytical results indicate that *Legionella* species were detected in one location: Music Room faucet (5 CFU/ml). The concentration recorded was below the OSHA guideline for domestic water (10 CFU/ml). Additionally, the percent of samples that tested positive for *Legionella* (10%) was below the action limit prescribed by CDC (30%). It should be noted that *Legionella pneumophila* – the bacteria most frequently associated with Legionellosis and Legionnaire's Disease – was not identified. As a precautionary measure, L&A recommends flushing the hot water system at this outlet for a minimum of five minutes prior to occupancy of the space.

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. The opinions expressed in this report are based on L&A's experience, relevant literature and available information.

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 Karrie Bontrager at (614) 481-8600, extension 136.

Sincerely,

A handwritten signature in black ink that reads "Matt Geiger". The signature is written in a cursive, slightly slanted style.

Matt Geiger
Project Manager

A handwritten signature in blue ink that reads "Karrie A. Bontrager". The signature is written in a cursive, slightly slanted style.

Karrie A. Bontrager, LEED AP
Principal and Sr. Microbiologist

APPENDIX A

Comprehensive Data Set

APPENDIX B
Laboratory Analytical Report



U.S. Micro-Solutions, Inc. * 302 Unity Plaza * Latrobe, PA 15650
Phone: 724-853-4047 Fax: 724-853-4049
www.usmslab.com



Customer Name: Lawhon & Associates
Customer Address: 1441 King Avenue
Columbus, OH 43201
Customer Phone: (614) 481-8600
PO Number:
Project Name/Number: 20-0441 Worthington CSD - Worthington Estates

Sample Date: September 17, 2020
Date Received: September 18, 2020
Date of Report: September 28, 2020
Fax: (614) 481-8610
Attention: Karrie Bontrager & Matt Geiger
Analysis Date: September 18, 2020
Sample Time: 0830
Analysis Time (hrs): 30.5

Customer sample numbers below are uniquely identified by prefixing Laboratory # 97928-20

Water/Liquid Sample(s) for *Legionella* Culture - Analytical Method MIC 06 MIC 07 (ISO 11731:2017)

Sample Number	Media	Sample Description	Results of Microbial Analysis
WE-91720-1	BCYE/GPCV	Mechanical Room - Hot Water Tank - Hot - First Draw	
AS = 0.5 CFU/mL (Volume examined: 100 mL)			Not Detected
WE-91720-2	BCYE/GPCV	Mechanical Room - Water Main - Cold - First Draw	
AS = 0.5 CFU/mL (Volume examined: 100 mL)			Not Detected
WE-91720-3	BCYE/GPCV	Music Room - Faucet - Cold - Flush	
AS = 0.5 CFU/mL (Volume examined: 100 mL)			Positive - 5 CFU/mL <i>Legionella</i> spp.
WE-91720-4	BCYE/GPCV	Classroom 11 - Faucet - Cold - First Draw	
AS = 0.5 CFU/mL (Volume examined: 100 mL)			Not Detected
WE-91720-5	BCYE/GPCV	Classroom 5 - Faucet - Cold - Flush	
AS = 0.5 CFU/mL (Volume examined: 100 mL)			Not Detected
WE-91720-6	BCYE/GPCV	Teacher Lounge - Faucet - Cold - Flush	
AS = 0.5 CFU/mL (Volume examined: 100 mL)			Not Detected

Notes:

CFU/mL = colony forming units per milliliter, AS = analytical sensitivity.
Results are reported as Positive or Not Detected.

A negative culture for *Legionella* spp. from a sample does not necessarily rule out its presence.
Results relate only to the samples tested. Results are reported as calculated. For biological data, the first and/or second digit should be considered significant.

When providing duplicates of this report, the document should be provided in total and not in section in accordance with AIHA-LAP, LLC. Any unauthorized or improper disclosure, copying, distribution, use, or falsification of these results is prohibited. USMS shall have no liability to the Customer or the Customer's customer for opinions stated, recommendations made, actions taken, or conduct implemented based on the test results reported.

Technical Manager:

Sharon Danko

Sharon Danko, AS, MLT (ASCP)

Contact: Sharon Danko, Technical Manager: 724-853-4047



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Water/Liquid Sample(s) for *Legionella* Culture - Analytical Method MIC 06 MIC 07 (ISO 11731:2017)

Sample Number	Media	Sample Description	Results of Microbial Analysis
WE-91720-7	BCYE/GPCV	Kitchen - Faucet - Hot - Flush	
AS = 0.5 CFU/mL (Volume examined: 100 mL)			Not Detected
WE-91720-8	BCYE/GPCV	Boys Restroom - Faucet - Hot - Flush	
AS = 0.5 CFU/mL (Volume examined: 100 mL)			Not Detected
WE-91720-9	BCYE/GPCV	Classroom 6A - Faucet - Hot - Flush	
AS = 0.5 CFU/mL (Volume examined: 100 mL)			Not Detected
WE-91720-10	BCYE/GPCV	Nurse Room - Faucet - Hot - Flush	
AS = 0.5 CFU/mL (Volume examined: 100 mL)			Not Detected

Notes:

CFU/mL = colony forming units per milliliter, AS = analytical sensitivity.
Results are reported as Positive or Not Detected.

A negative culture for *Legionella* spp. from a sample does not necessarily rule out its presence.
Results relate only to the samples tested. Results are reported as calculated. For biological data, the first and/or second digit should be considered significant.

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Technical Manager:

Sharon Danko

Sharon Danko, AS, MLT (ASCP)

Contact: Sharon Danko, Technical Manager: 724-853-4047

End of Report

 U.S. Micro-Solutions, Inc. 302 Unity Plaza Latrobe, PA 15650 P: 724-853-4047 F: 724-853-4049 supplies@usmslab.com		 NY ELAP #12055 The New York Environmental Laboratory Approval Program	
LEGIONELLA / WATER TEST REQUEST - CHAIN OF CUSTODY			
CUSTOMER NAME: Lawhon & Associates ADDRESS: 1441 King Avenue ATTENTION TO: Karrie Bontrager & Matt Geiger		PHONE #: 614-481-8600 CITY: Columbus STATE: Ohio ZIP: 43201	
SAMPLE OBTAINED BY: Matt Geiger PROJECT NAME/NUMBER: 20-0441 Worthington CSD - Worthington Estates PO#		E-MAIL: kbontrager@lawhon-assoc.com & mgeiger@lawhon-assoc.com	
RESULTS: <input checked="" type="checkbox"/> FAX <input checked="" type="checkbox"/> EMAIL <input checked="" type="checkbox"/>		SAMPLE TYPE: <input checked="" type="checkbox"/> WATER <input type="checkbox"/> SWAB	
# SAMPLES: 10		SAMPLES collected in New York state? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
SAMPLE NUMBER		SAMPLE DATE / TIME	
SAMPLE LOCATION AND DESCRIPTION		POTABLE WATER: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	
WE-91720-1		Mechanical Room - Hot Water Tank - Hot - First Draw	
WE-91720-2		Mechanical Room - Water Main - Cold - First Draw	
WE-91720-3		Music Room - Faucet - Cold - Flush	
WE-91720-4		Classroom 11 - Faucet - Cold - First Draw	
WE-91720-5		Classroom 5 - Faucet - Cold - Flush	
WE-91720-6		Teacher Lounge - Faucet - Cold - Flush	
WE-91720-7		Kitchen - Faucet - Hot - Flush	
WE-91720-8		Boys Restroom - Faucet - Hot - Flush	
WE-91720-9		Classroom 6A - Faucet - Hot - Flush	
RELINQUISHED BY - CUSTOMER (MUST SIGN)		DATE AND TIME 9/17/2020 @ 4:00pm	
RECEIVED BY - LAB USE ONLY		ANALYST INITIALS	

Rev 11-27-18

AMENDED

collection state per Karrie Bontrager
 OK 09-18-20



supplies@usmslab.com



NY ELAP #12055
The New York Environmental
Laboratory Approval Program

LEGIONELLA / WATER TEST REQUEST - CHAIN OF CUSTODY

Additional Samples

CUSTOMER NAME: Lawhon & Associates				SAMPLE TYPE	POTABLE WATER		TEST TYPE			LAB USE ONLY		
PROJECT NAME/NUMBER: 20-0441 Worthington CSD - Worthington Estates					WATER	SWAB	YES	NO	LEGIONELLA	Heterotrophic Plate Count	Chlorine (ppm)	Temperature (°C)
SAMPLE NUMBER	SAMPLE DATE / TIME	SAMPLE LOCATION AND DESCRIPTION										
WE-91720-10	9/17/2020 8:30am-9:10am	Nurse Room - Faucet - Hot - Flush		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
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