



# LEGIONELLA TEST RESULTS SUMMARY LOG

<b>Summary Log Date:</b>	4.24.2023	<b>Customer Number:</b>	6880209	<b>Sampling Date:</b>	4.17.2023
<b>Prepared By:</b>	Joseph Mahfet	<b>Customer Name:</b>	DGS	<b>Legionella Analysis Lab Report Date:</b>	4.23.2023
<b>Territory Number:</b>	0302	<b>City, State:</b>	San Diego, CA 92108	<b>New/Retest (select from dropdown):</b>	New

<b>Point of Entry (POE) pH:</b> 7.9	<b>Disinfectant:</b> Monochloramine	<b>Supplemental Disinfectant:</b> Select
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Sample Number	Location/Sample Description	Disinfectant Residual (ppm)		HW Temp (°F, sec)	Sample Type	Legionella Results (water as CFU/mL, swab as CFU/swab)					Action Level <sup>3</sup>	HPC <sup>2,4</sup>	Action Level <sup>4</sup>
		Total Cl2	Select			L. pneumophila SGI <sup>1</sup>	L. pneumophila SG2-14 <sup>1</sup>	Other L. spp <sup>1</sup>	Total <sup>2</sup>				
1	POE, P 47.91,TCL 2.06	2.06			Water Potable - POE	ND	ND	ND	ND	0.1	ND	500	
2	1st Floor,Mens RR,West, Center,Sink,Pre,CW				Water Potable - CW	ND	191.0	ND	191.0	0.1	20	500	
3	1st Floor,Mens RR,West, Center,Sink,Post, TCL,CW,TCL .02	0.02			Water Potable - CW	ND	18.0	ND	18.0	0.1	10	500	
4	1st Floor,Mens RR,West, Center,Sink,Post, TCL,, HW,TCL .2,45s,123.6			123.6,45s	Water Potable - HW	ND	22.0	ND	22.0	0.1	0	500	
5	1st Floor,Mens RR,West, Center,Sink,Swab				Swab Potable - Mixed	ND	110.0	ND	110.0	0.1	0	N/A	
6	2nd Fl, Mens RR, West, Center Sink,Pre,CW,Pre,				Water Potable - CW	ND	10.0	ND	10.0	0.1	0	500	
7	2nd Fl, Mens RR, West, Center Sink,Post, CW, TCL .14	0.14			Water Potable - CW	ND	0.8	ND	0.8	0.1	0	500	
8	2nd Fl, Mens RR, West, Center Sink, Swab				Swab Potable - Mixed	ND	40.0	ND	40.0	0.1	0	N/A	
9	2nd Fl, Mens RR, West, Center Sink,HW, Post, TCL .04	0.04			Water Potable - HW	ND	8.0	ND	8.0	0.1	0	500	
10	2nd Fl, Womens RR, East, Left Sink, Swab				Swab Potable - Mixed	ND	11,300.0	ND	11,300.0	0.1	0	N/A	
11	2nd Fl, Womens RR, East, HW, Pre,Left Sink,				Water Potable - HW	ND	250.0	ND	250.0	0.1	20	500	
12	2nd Fl, Womens RR, East, HW,Post,47 sec,129.7,TCL .08,Left Sink	0.08		129.7,47s	Water Potable - HW	ND	16.0	ND	16.0	0.1	0	500	
13	2nd Fl, Womens RR, East, CW,Post, TCL .10, Left Sink	0.10			Water Potable - CW	ND	8.0	ND	8.0	0.1	0	500	
14	Suite 208,Kitchen,Sink,Swab				Swab Potable - Mixed	ND	ND	ND	ND	0.1	0	N/A	
15	J30,Mop Sink, Pre,CW				Water Potable - CW	ND	ND	ND	ND	0.1	0	500	

<sup>1</sup> **Results** - NEVER enter a result of "0" - When "Not Detected" is reported, use "ND" in this spreadsheet.

<sup>2</sup> **Formats** - Blue numbers indicate positive, below action level. Red numbers indicate positive, at or above action level. "ND" and "0" always appear Black. A result of "<1" will be counted as "1" in the Legionella total (e.g. <1 + <1 + 10 = 12).

<sup>3</sup> **Legionella Action Levels** - based on CDC Limits of 0 CFU/mL for potable water, OSHA limit of 100 CFU/mL for cooling water, the State of New York limit of 20 CFU/mL for cooling water and the New York City limit of 10 CFU/mL for cooling water.

<sup>4</sup> **HPC Action Levels** - heterotrophic plate count, CFU/mL. Action Level References: **200 CFU/ml** for Whirlpool/Spa & Decorative Fountain - ANSI-APSP Document page 36, **500 CFU/ml** for Potable (POE, CW, HW, Mixed), Humidifier/Air Washer, Ice Machine (Ice - potable), Ice Machine (MU Water - potable) & Other (Potable) - Federal Regulatory Limit/MCL per 67 FR 1811; U.S. EPA, 2002, **10,000 CFU/ml** for Cooling Towers - CTI Guideline July 2008



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Summary Log Date:	4.24.2023
Prepared By:	Joseph Mahfet
Territory Number:	0302

Customer Number:	6880209
Customer Name:	DGS
City, State:	San Diego, CA 92108

Sampling Date:	4.17.2023
Legionella Analysis Lab Report Date:	4.23.2023
New/Retest (select from dropdown)?:	New

Sample Number	Location/Sample Description	Disinfectant Residual (ppm)		HW Temp (°F, sec)	Sample Type	Legionella Results (water as CFU/mL, swab as CFU/swab)							
		Total Cl2	Select			L. pneumophila SGI <sup>1</sup>	L. pneumophila SG2-14 <sup>1</sup>	Other L. spp <sup>1</sup>	Total <sup>2</sup>	Action Level <sup>3</sup>	HPC <sup>2,4</sup>	Action Level <sup>4</sup>	
16	J30,Mop Sink, Post, CW,pH 7.49,TCL .03	0.03			Water	Potable - CW	ND	ND	ND	ND	0.1	0	500
17	J30,Mop Sink, Swab				Swab	Potable - Mixed	ND	ND	ND	ND	0.1	0	N/A
18	Roof,CW, Hose BIB,Tcl ,15,pH 7.8	0.15			Water	Potable - CW	ND	ND	0.3	0.3	0.1	0	500
19	Roof, Boiler Tank,HW,TCL .36	0.36			Water	Potable - HW	ND	0.1	ND	0.1	0.1	0	500
20	Roof, CW Expansion Tank (HW), TCL .21	0.21			Water	Potable - HW	ND	ND	14.0	14.0	0.1	0	500
21	Roof, East Hose BIB,CW, TCL .1, pH 7.7	0.10			Water	Potable - CW	ND	ND	0.1	0.1	0.1	0	500
22	1st Floor, J-11,Mop Sink, HW, Pre				Water	Potable - HW	ND	0.3	ND	0.3	0.1	50	500
23	1st Floor, J-11,Mop Sink, HW,Post, TCL .047, 22s	0.47		22s	Water	Potable - HW	ND	0.2	ND	0.2	0.1	0	500
24	1st Floor, J-11,Mop Sink, CW, Post,TCL, pH 7.7				Water	Potable - CW	ND	ND	ND	ND	0.1	0	500
25	1st Floor, J-11,Mop Sink, Swab				Swab	Potable - Mixed	ND	ND	ND	ND	0.1		N/A
26					Water	Select							
27					Water	Select							
28					Water	Select							
29					Water	Select							
30					Water	Select							

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<sup>2</sup> Formats - Blue numbers indicate positive, below action level. Red numbers indicate positive, at or above action level. "ND" and "0" always appear Black. A result of "<1" will be counted as "1" in the Legionella total (e.g. <1 + <1 + 10 = 12).

<sup>3</sup> Legionella Action Levels - based on CDC Limits of 0 CFU/mL for potable water, OSHA limit of 100 CFU/mL for cooling water, the State of New York limit of 20 CFU/mL for cooling water and the New York City limit of 10 CFU/mL for cooling water.

<sup>4</sup> HPC Action Levels - heterotrophic plate count, CFU/mL. Action Level References: 200 CFU/ml for Whirlpool/Spa & Decorative Fountain - ANSI-APSP Document page 36, 500 CFU/ml for Potable (POE, CW, HW, Mixed), Humidifier/Air Washer, Ice Machine (Ice - potable), Ice Machine (MU Water - potable) & Other (Potable) - Federal Regulatory Limit/MCL per 67 FR 1811; U.S. EPA, 2002, 10,000 CFU/ml for Cooling Towers - CTI Guideline July 2008



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Summary Log Date:	4.24.2023
Prepared By:	Joseph Mahfet
Territory Number:	0302

Customer Number:	6880209
Customer Name:	DGS
City, State:	San Diego, CA 92108

Sampling Date:	4.17.2023
Legionella Analysis Lab Report Date:	4.23.2023
New/Retest (select from dropdown):	New

### MANAGEMENT VALIDATION

A	Concentration	<i>Potable water action level/control limit is exceeded if any Legionella is present per CDC. Cooling Tower action level/control limit is 100 cfu/ml per OSHA. Other Authorities having jurisdiction (AHJs) may have other restrictions.</i>		
B	<b>Percent Positive (Potable Water Samples)</b>	<b>Total Positive</b>	<b>Total Samples</b>	<b>% Positive</b>
	Potable - POE	0	1	0%
	Potable - CW	7	10	70%
	Potable - HW	7	8	88%
	Potable - Mixed	3	6	50%
	Select			
	Select			
	Select			
	<b>Overall Total</b>	<b>17</b>	<b>25</b>	<b>68%</b>
C	Legionella Strains Present	<i>L. pneumophila serotype 2-14, other Legionella strains)</i>		
D	Breakdown of Findings	<i>Both Occupied and Non-occupied areas as well as Hot Water Expansion Tank Tank, and Hot &amp; Cold samples show signs of Legionella contamination. Swab Samples also show positivity.</i>		
E	Equipment Specific Recommendations	<i>Another round of samples to validate remediation, If levels are still elevated recommended to remediate again. Recommend continuous secondary disinfection combined with a comprehensive flushing program. Point of use filtration has been installed since this testing was performed.</i>		
F	Occupant Susceptibility	<b>Very High</b>		

Percent Positive gives an overall rating of a building's "health". Having >30% Positive potable water samples indicates higher than acceptable Legionella levels throughout a building and actions should be taken to lower below 30%. Some AHJs require that Percent Positives to be under 30%. The best way to achieve this is to have an ANSI/ASHRAE Standard 188-2015 compliant Water Management Program in place and implemented.

**COMMENTS, SUMMARY OF FINDINGS AND RECOMMENDATIONS:**

Positivity is high at 68% of all samples testing positive for legionella. Cold samples tested positivity at 70%. Hot samples tested positivity at 88%. Swab samples tested positivity at 50%. These percentages are indicative of biofilm and bacteria fouling in the cold and hot water potable systems.

Remediation took place on Thursday April 20th, 2023 with the injection of chlorine dioxide to both the cold and hot water systems. This was followed by Aquamedix Baclyser Inline infection control filters being installed at all point of use faucets.

For sample I0 it is recommended to replace the faucet. Disinfect the new faucet and retest.

Our recommendation is to perform a follow up round of Legionella testing 3 to 7 business days after a remediation to validate remedial actions. The filters will be bypassed to collect samples and get a good representation of the water systems.

Recommended to install a continuous secondary disinfection system to inject disinfectant into the hot and cold water system. This secondary disinfection system combined with a comprehensive flushing program can help control the growth of biofilms and legionella.

Recommended to implement a water safety plan to help control the growth of legionella.

**Disclaimer:** The *Legionella* analytical test and explanative results provided do not necessarily assure that hazards from pathogenic microorganisms have been eliminated or controlled nor that risk of harm from such hazards has been reduced. Garratt-Callahan provides no warranties with respect to the *Legionella* analytical test and explanative results. Garratt-Callahan is not liable to Customer for damages arising out of or relating to use by Customer of the *Legionella* analytical tests, interpretations, explanations, nor summary of findings and recommendations. Test results are intended to be interpreted by Customer as part of a properly designed *Legionella* Water Management Program, including proper maintenance and operation of all equipment, including chemical treatment, to be performed by Customer, unless such work is to be performed by Garratt-Callahan pursuant to a separate contract between Customer and Garratt Callahan.

Company Information  
Garratt Callahan Company  
50 Ingold Rd.  
Burlingame, CA 94010-2206

Job Site:  
DGS  
7575 Metropolitan Dr. Ste 101  
San Diego, CA 92108

Batch Number: 230418017  
Sampled By: Joseph Mahfet  
P.O. Number: 415763  
Customer Number: 6880209  
Report Status: Original

Client Sample ID: 1  
Location: POE, P 47.91, TCL 2.06

Lab Sample ID: 368190

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Aerobic Bacteria	B010 - Aerobic Bacteria Water	Standard Methods	None Detected	CFU/mL	10 CFU/mL	4/21/2023	96 Hour
Legionella pneumophila SG1	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella non-pneumophila	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour

Client Sample ID: 2  
Location: 1st Floor, Mens RR, West, Center, Sink, Pre, CW

Lab Sample ID: 368191

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Aerobic Bacteria	B010 - Aerobic Bacteria Water	Standard Methods	20	CFU/mL	10 CFU/mL	4/21/2023	96 Hour
Legionella pneumophila SG1	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L011 - Legionella Potable Water	BCYE & GVPC	191	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella non-pneumophila	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour

Client Sample ID: 3

Lab Sample ID: 368192

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Location: 1st Floor,Mens RR,West, Center,Sink,Post, TCL,CW,TCL .02

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Aerobic Bacteria	B010 - Aerobic Bacteria Water	Standard Methods	10	CFU/mL	10 CFU/mL	4/21/2023	96 Hour
Legionella pneumophila SG1	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L011 - Legionella Potable Water	BCYE & GVPC	18	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella non-pneumophila	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour

Client Sample ID: 4

Lab Sample ID: 368193

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Location: 1st Floor,Mens RR,West, Center,Sink,Post, TCL,, HW,TCL .2,45s,123.6

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Aerobic Bacteria	B010 - Aerobic Bacteria Water	Standard Methods	None Detected	CFU/mL	10 CFU/mL	4/21/2023	96 Hour
Legionella pneumophila SG1	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L011 - Legionella Potable Water	BCYE & GVPC	22	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella non-pneumophila	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour

Client Sample ID: 5

Lab Sample ID: 368194

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Location: 1st Floor,Mens RR,West, Center,Sink,Swab

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Legionella pneumophila SG1	L012 - Legionella Swab Potable	BCYE & GVPC	None Detected	CFU/Swab	10 CFU/Swab	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L012 - Legionella Swab Potable	BCYE & GVPC	110	CFU/Swab	10 CFU/Swab	4/23/2023	96 Hour
Legionella non-pneumophila	L012 - Legionella Swab Potable	BCYE & GVPC	None Detected	CFU/Swab	10 CFU/Swab	4/23/2023	96 Hour



Client Sample ID: 6

Lab Sample ID: 368195

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Location: 2nd Fl, Mens RR, West, Center Sink,Pre,CW,Pre,

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Aerobic Bacteria	B010 - Aerobic Bacteria Water	Standard Methods	None Detected	CFU/mL	10 CFU/mL	4/21/2023	96 Hour
Legionella pneumophila SG1	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L011 - Legionella Potable Water	BCYE & GVPC	10	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella non-pneumophila	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour

Client Sample ID: 7

Lab Sample ID: 368196

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Location: 2nd Fl, Mens RR, West, Center Sink,Post, CW, TCL .14

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Aerobic Bacteria	B010 - Aerobic Bacteria Water	Standard Methods	None Detected	CFU/mL	10 CFU/mL	4/21/2023	96 Hour
Legionella pneumophila SG1	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L011 - Legionella Potable Water	BCYE & GVPC	0.8	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella non-pneumophila	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour

Client Sample ID: 8

Lab Sample ID: 368197

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Location: 2nd Fl, Mens RR, West, Center Sink, Swab

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Legionella pneumophila SG1	L012 - Legionella Swab Potable	BCYE & GVPC	None Detected	CFU/Swab	10 CFU/Swab	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L012 - Legionella Swab Potable	BCYE & GVPC	40	CFU/Swab	10 CFU/Swab	4/23/2023	96 Hour
Legionella non-pneumophila	L012 - Legionella Swab Potable	BCYE & GVPC	None Detected	CFU/Swab	10 CFU/Swab	4/23/2023	96 Hour





Client Sample ID: 9

Lab Sample ID: 368198

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Location: 2nd Fl, Mens RR, West, Center Sink,HW, Post, TCL .04

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Aerobic Bacteria	B010 - Aerobic Bacteria Water	Standard Methods	None Detected	CFU/mL	10 CFU/mL	4/21/2023	96 Hour
Legionella pneumophila SG1	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L011 - Legionella Potable Water	BCYE & GVPC	8	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella non-pneumophila	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour

Client Sample ID: 10

Lab Sample ID: 368199

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Location: 2nd Fl, Womens RR, East, Left Sink, Swab

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Legionella pneumophila SG1	L012 - Legionella Swab Potable	BCYE & GVPC	None Detected	CFU/Swab	10 CFU/Swab	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L012 - Legionella Swab Potable	BCYE & GVPC	11,300	CFU/Swab	10 CFU/Swab	4/23/2023	96 Hour
Legionella non-pneumophila	L012 - Legionella Swab Potable	BCYE & GVPC	None Detected	CFU/Swab	10 CFU/Swab	4/23/2023	96 Hour

Client Sample ID: 11

Lab Sample ID: 368200

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Location: 2nd Fl, Womens RR, East, HW, Pre,Left Sink,

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Aerobic Bacteria	B010 - Aerobic Bacteria Water	Standard Methods	20	CFU/mL	10 CFU/mL	4/21/2023	96 Hour
Legionella pneumophila SG1	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L011 - Legionella Potable Water	BCYE & GVPC	250	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella non-pneumophila	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour





Client Sample ID: 12

Lab Sample ID: 368201

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Location: 2nd Fl, Womens RR, East, HW,Post,47 sec,129.7,TCL .08,Left Sink

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Aerobic Bacteria	B010 - Aerobic Bacteria Water	Standard Methods	None Detected	CFU/mL	10 CFU/mL	4/21/2023	96 Hour
Legionella pneumophila SG1	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L011 - Legionella Potable Water	BCYE & GVPC	16	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella non-pneumophila	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour

Client Sample ID: 13

Lab Sample ID: 368202

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Location: 2nd Fl, Womens RR, East, CW,Post, TCL .10, Left Sink

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Aerobic Bacteria	B010 - Aerobic Bacteria Water	Standard Methods	None Detected	CFU/mL	10 CFU/mL	4/21/2023	96 Hour
Legionella pneumophila SG1	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L011 - Legionella Potable Water	BCYE & GVPC	8	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella non-pneumophila	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour

Client Sample ID: 14

Lab Sample ID: 368203

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Location: Suite 208,Kitchen,Sink,Swab

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Legionella pneumophila SG1	L012 - Legionella Swab Potable	BCYE & GVPC	None Detected	CFU/Swab	10 CFU/Swab	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L012 - Legionella Swab Potable	BCYE & GVPC	None Detected	CFU/Swab	10 CFU/Swab	4/23/2023	96 Hour
Legionella non-pneumophila	L012 - Legionella Swab Potable	BCYE & GVPC	None Detected	CFU/Swab	10 CFU/Swab	4/23/2023	96 Hour



Client Sample ID: 15  
Location: J30,Mop Sink, Pre,CW

Lab Sample ID: 368204

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Aerobic Bacteria	B010 - Aerobic Bacteria Water	Standard Methods	None Detected	CFU/mL	10 CFU/mL	4/21/2023	96 Hour
Legionella pneumophila SG1	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella non-pneumophila	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour

Client Sample ID: 16  
Location: J30,Mop Sink, Post, CW,pH 7.49,TCL .03

Lab Sample ID: 368205

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Aerobic Bacteria	B010 - Aerobic Bacteria Water	Standard Methods	None Detected	CFU/mL	10 CFU/mL	4/21/2023	96 Hour
Legionella pneumophila SG1	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella non-pneumophila	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour

Client Sample ID: 17  
Location: J30,Mop Sink, Swab

Lab Sample ID: 368206

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Legionella pneumophila SG1	L012 - Legionella Swab Potable	BCYE & GVPC	None Detected	CFU/Swab	10 CFU/Swab	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L012 - Legionella Swab Potable	BCYE & GVPC	None Detected	CFU/Swab	10 CFU/Swab	4/23/2023	96 Hour
Legionella non-pneumophila	L012 - Legionella Swab Potable	BCYE & GVPC	None Detected	CFU/Swab	10 CFU/Swab	4/23/2023	96 Hour

Client Sample ID: 18  
Location: Roof,CW, Hose BIB,Tcl ,15,pH 7.8

Lab Sample ID: 368207

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Legionella pneumophila SG1	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella non-pneumophila	L011 - Legionella Potable Water	BCYE & GVPC	0.3	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour



Client Sample ID: 19  
Location: Roof, Boiler Tank,HW,TCL .36

Lab Sample ID: 368208

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Legionella pneumophila SG1	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L011 - Legionella Potable Water	BCYE & GVPC	0.1	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella non-pneumophila	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour

Client Sample ID: 20  
Location: Roof, CW Expansion Tank (HW), TCL .21

Lab Sample ID: 368209

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Legionella pneumophila SG1	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella non-pneumophila	L011 - Legionella Potable Water	BCYE & GVPC	14	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour

Client Sample ID: 21  
Location: Roof, East Hose BIB,CW, TCL .1, pH 7.7

Lab Sample ID: 368210

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Aerobic Bacteria	B010 - Aerobic Bacteria Water	Standard Methods	None Detected	CFU/mL	10 CFU/mL	4/21/2023	96 Hour
Legionella pneumophila SG1	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella non-pneumophila	L011 - Legionella Potable Water	BCYE & GVPC	0.1	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour

Client Sample ID: 22  
Location: 1st Floor, J-11,Mop Sink, HW, Pre

Lab Sample ID: 368211

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Aerobic Bacteria	B010 - Aerobic Bacteria Water	Standard Methods	50	CFU/mL	10 CFU/mL	4/21/2023	96 Hour
Legionella pneumophila SG1	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L011 - Legionella Potable Water	BCYE & GVPC	0.3	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella non-pneumophila	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour



Client Sample ID: 23

Lab Sample ID: 368212

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Location: 1st Floor, J-11,Mop Sink, HW,Post, TCL .047, 22s

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Aerobic Bacteria	B010 - Aerobic Bacteria Water	Standard Methods	None Detected	CFU/mL	10 CFU/mL	4/21/2023	96 Hour
Legionella pneumophila SG1	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L011 - Legionella Potable Water	BCYE & GVPC	0.2	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella non-pneumophila	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour

Client Sample ID: 24

Lab Sample ID: 368213

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Location: 1st Floor, J-11,Mop Sink, CW, Post,TCL, pH 7.7

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Aerobic Bacteria	B010 - Aerobic Bacteria Water	Standard Methods	None Detected	CFU/mL	10 CFU/mL	4/21/2023	96 Hour
Legionella pneumophila SG1	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour
Legionella non-pneumophila	L011 - Legionella Potable Water	BCYE & GVPC	None Detected	CFU/mL	0.1 CFU/mL	4/23/2023	96 Hour

Client Sample ID: 25

Lab Sample ID: 368214

Collection Date: 4/17/2023

Receive Date: 4/18/2023

Location: 1st Floor, J-11,Mop Sink, Swab

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Legionella pneumophila SG1	L012 - Legionella Swab Potable	BCYE & GVPC	None Detected	CFU/Swab	10 CFU/Swab	4/23/2023	96 Hour
Legionella pneumophila SG2-15	L012 - Legionella Swab Potable	BCYE & GVPC	None Detected	CFU/Swab	10 CFU/Swab	4/23/2023	96 Hour
Legionella non-pneumophila	L012 - Legionella Swab Potable	BCYE & GVPC	None Detected	CFU/Swab	10 CFU/Swab	4/23/2023	96 Hour

*Brandon "Smitty" Smith*

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*Richard D. Miller*

Dr. Richard Miller, Ph.D.

President &amp; Chief Scientific Officer

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## Report Notes Applicable to All Analyses

- Sample transit delays occurring between the time of collection and receipt at the laboratory can affect the validity of test results. EST's recommendations for the collection, transport, and shipping of microbiological samples are located at [www.estechlab.com](http://www.estechlab.com). See the document titled "Sample Collection Guidelines" for analysis-specified recommendations. EST does not recommend transit exceeding referenced guidelines. In the event of a sample transit delay, designated account contacts are notified, and samples are analyzed only upon documented processing requests.
- Data are not corrected based on results for blank samples. Results relate only to items tested. Results apply to samples as received.
- Raw counts (available upon request) are used to calculate test results using all significant figures. Results found at or above the analytical sensitivity are reported to three significant figures; amounts below the analytical sensitivity are listed as None Detected.
- Analytical Sensitivity is defined as the lowest concentration that can be detected by a test method based on the amount or portion of sample analyzed and is reported without rounding. For qualitative samples, results found at or above this level are reported as "Present" and amounts below this limit are reported as "Absent".
- Samples collected by EST's Industrial Hygiene Department are indicated on reports by the suffix, /EST, appearing after the "Sampled By" field. EST is responsible for all the information provided on issued reports unless information is provided by the customer. Chain of Custody (COC) records accompanying samples submitted to laboratory are scanned and included with issued reports; see COC records for traceability of provided information including but not limited to sample collection time, sample rate, transport conditions, sampling media, and lot numbers. If pertinent information needed for sample processing or calculation of reported results is omitted from a COC record, customers are contacted for verification and information is recorded on the submitted COC record or a proxy COC record if one has not been provided.

## Abbreviations

- ANAB = ANSI National Accreditation Board; accreditation fulfills the requirements of ISO/IEC 17025:2017.
- Media Types: BART = Biological Activity Reaction Tester, BCSA = *Burkholderia cepacia* Selective Agar, BCYE = *Legionella* Buffered Charcoal Yeast Extract Agar, Cetrimide = *Pseudomonas aeruginosa* Selective Agar, GVPC = *Legionella* BCYE Selective Agar with antibiotics (Glycine, Vancomycin, Polymyxin, and Cycloheximide), Chromogenic Media = chromogenic differential media for presumptive pathogen detection (*E. coli*, *Klebsiella/Enterobacter/Serratia* spp., *Enterococcus* spp., *Proteus/Morganella/Providencia* spp., *Staphylococcus aureus*, *Pseudomonas* spp., *Staphylococcus saprophyticus*, *Candida* spp., *Citrobacter* spp.), Leeds Medium = *Acinetobacter* Selective Medium, ME\* = Malt Extract fungal Identification Agar with 0.01% Chloramphenicol, MHA = Mueller Hinton Agar, Microfilm EBEC = Enterobacteriaceae/*E. coli* Selective Media, Microfilm TCEC = Total Coliform/*E. coli* Selective Media, Microfilm YMC = Yeast and Mold Count Media, R2A = Reasoner's 2A Bacterial Agar, SMA = Standard Methods Agar (a.k.a. Plate Count Agar), SSA = *Stenotrophomonas* Selective Agar, TSA = Tryptic Soy Agar, TSA\* = Tryptic Soy Agar with 0.005% Cycloheximide, TSLT = Tryptic Soy Agar Contact Plate with Lecithin and Tween 80, Selective 7H11 = Middlebrook 7H11 Selective Agar for *Mycobacterium* species.
- Miscellaneous: C= Celsius, CFU = Colony Forming Unit, F = Fahrenheit, g = gram, L = liter, m = meter, ml = milliliter, SG = serogroup, HPC = Heterotrophic Plate Count, NTM = non-tuberculosis mycobacteria, N/A = Not Applicable, N/R = Not Requested.

## Bacteria – Standard Heterotrophic Plate Counts for Water Samples

- Test Code B010: Aerobic, heterotrophic plate bacteria counts using Microfilm APC standard methods agar (AOAC Method 051702).
- Test Code B100: Aerobic, heterotrophic plate counts are obtained using SMA plates (Standard Methods 9215C).
- Test Code B011: Anaerobic, heterotrophic plate counts are obtained using SMA agar plates (Standard Methods 9215C) under anaerobic gas generating systems.

## Bacteria – Plate Counts for Air, Swab, Bulk-Solid, and Contact Plates

- Test Codes: B002 (Air), B004 (Swab), B007 (Bulk-solid), B027 (Contact)
- Plate counts are routinely obtained utilizing SMA agar plates for air, swab, and bulk-solid samples as described above.
- Other agars may be utilized upon customer request (e.g., TSA plates incubated for 3-5 days at 35°C or R2A plates incubated for 5-7 days at 30°C).
- Bacteria plate counts are obtained for bulk-liquid and bulk-solid samples using the spread plate method.
- Surface contact plates (e.g., TSLT) are incubated directly at room temperature for 3-5 days unless otherwise requested and noted.

## Legionella Culture Analysis

- Test Codes: Non-potable L001 (Bulk-Liquid/Water), L002 (Swab), L003 (Bulk-Solid), L099 (Air)
  - Test Codes: Potable L011, LCMS (Bulk-Liquid/Water), L012 (Swab), L013 (Bulk-Solid)
  - Total Viable *Legionella*: Viable *Legionella* counts (*Legionella pneumophila* SG1, *Legionella pneumophila* SG2-15, or *Legionella non-pneumophila* species) are obtained using an in-house modified method based on CDC and ISO 11731:2017(E) procedures for the recovery of *Legionella* from the environment.
- Legionella non-pneumophila* species include *L. anisa*, *L. bozemanii* 1 & 2, *L. dumoffii*, *L. feelei*, *L. gormanii*, *L. jordanis*, *L. longbeachae* 1 & 2, and *L. micdadei*.





## Environmental Pathogen Monitoring - Listeria and Salmonella Immunoassay Tests

- Test Code B041: *Listeria*. Swabs are enriched in PDX-LIB™ indicator broth for enhanced recovery and selection.
- Test Code B042: *Salmonella*. Swabs are enriched in PDX-SIB™ indicator broth for enhanced recovery and selection.
- Test methods AOAC Research Institute approved for monitoring environmental surfaces.
- Presumptive positive cultures are confirmed using pathogen specific selective agars.

## Fungi

- Test Codes Count & Identification: F003 (Swab), F005 (Bulk-Solid), F007 (Bulk-Liquid), F014 (Contact Plate)
- Test Codes Count Only: F004 (Swab), F006 (Bulk-Solid), F008 (Bulk-Liquid), F013 (Contact Plate)
- Fungal samples processed for counts and identification are obtained directly from listed processing agars.
- Fungal counts only (no identification) are obtained using Fungal Count Yeast and Mold Count (YMC) Microfilm™
- All samples are incubated aerobically at 29°C for 7 days unless otherwise requested.

## Pathogen Screen Culture Analysis – Potable Water Samples

- Test Code CMS1: Waterborne pathogen screen.
- Test Code LCMS: Waterborne pathogen screen accompanying *Legionella* analysis on BCYE and GVPC agar.
- Analyses on pathogen specific selective agars for the following organisms: *Acinetobacter* species, *Burkholderia cepacia*, *Pseudomonas aeruginosa*, *Stenotrophomonas maltophilia*, Rapidly-growing non-tuberculosis mycobacteria, Fungal Count (mold and yeast) and Mold Identification (Genus-level; common *Aspergillus* species).
- Incubations at optimal growth temperatures for each pathogen and presumptive positive cultures are confirmed utilizing pathogenic specific biochemical tests.

## Non-tuberculous Mycobacteria (NTM) Rapid-growing Mycobacteria (RGM) Screen – Culture Method

- Test Code: CMS1, LCMS, B043 – Culture method
- Detection of rapid-growing ( $\leq 7$ -day) non-tuberculous mycobacteria on 7H11 Selective agar with acid-fast stain confirmation.

## Non-tuberculous Mycobacteria (NTM) vPCR Analysis

- Test Code: P002 - Viable PCR\*
- Detection of *Mycobacteria* in environmental water samples. This rapid vPCR screen provides a total count for all non-tuberculous mycobacteria species and for each of the two most clinically relevant slow-growing mycobacteria (SGM) species, *avium* and *intracellulare*, which would require a four-week incubation by the culture method.
- Results obtained using an in-house modified method by concentration and genic amplification by quantitative polymerase chain reaction (qPCR).
- Analysis by vPCR includes viable but non-culturable (VBNC) *Mycobacteria* not detected by routine viable culture analysis. In addition,
- VBNC *Mycobacteria* may be present in a damaged state in response to disinfectants or other toxic conditions, but they may be unable to recover and grow on the surface of an agar petri dish (i.e., non-culturable), and appear as a none detected viable *Mycobacteria* culture result.
- If damaged *Mycobacteria* are introduced to a more favorable environment, such as an amoeba living in an environmental water source or into a human lung macrophage, they may be able to recover and even proliferate. In humans, following inhalation of *Mycobacteria* from a contaminated source, recovery and growth in lung tissue may result in a pulmonary disease infection.
- Analysis by vPCR allows the simultaneous detection of both culturable and VNBC *Mycobacteria* from environmental samples to ensure an accurate risk assessment.
- vPCR NTM analyses is pending ANAB scope of accreditation for test methods.

## *Pseudomonas aeruginosa* and other *Pseudomonas* species Culture Analysis

- Test Codes: B018 (Water), B019 (Swab); *Pseudomonas aeruginosa* isolation and identification on or chromogenic Agar or Cetrimide selective agar incubated for 3-5 days at 41°C; presumptive positive cultures are confirmed by biochemical tests.
- Test Codes: B062 (Water), B063 (Swab); *Pseudomonas* species screen on or chromogenic Agar or Cetrimide selective agar incubated for 3-5 days at 30°C.

## Sewage Contamination Screen - Total Coliform & *E. coli*

- Tests are applicable for the detection of environmental fecal contamination, not for potable drinking water certification.
- Test Codes: B022 (Water), B023 (Swab)

## Legionella vPCR

- Test Code: P001 - Viable PCR
- Detection of non-viable discrimination of *Legionella pneumophila* SG1-15 and *Legionella pneumophila* SG1 from environmental water samples.
- Results obtained using an in-house modified method based on ISO 12869:2019; Water quality – Detection and quantification of *Legionella* spp. and/or *Legionella pneumophila* by concentration and genic amplification by quantitative polymerase chain reaction (qPCR).
- *Legionella* detected by vPCR include those that are viable but non-culturable (VBNC) bacteria not detected by routine viable culture analysis.
- VBNC *Legionella* may be present in a damaged (but not dead) state in response to disinfectants or other toxic conditions, where the bacteria were unable to recover and grow on the surface of an agar petri dish (i.e., non-culturable), and appear as a none detected viable *Legionella* result.
- If damaged *Legionella* are introduced to a more favorable environment, either an amoeba in an environmental water source or into a human lung macrophage by inhalation, they may be able to recover and even proliferate. In humans, recovery in lung tissue may result in a Legionnaire's disease infection.
- vPCR allows the simultaneous detection of both culturable and non-culturable *Legionella* from environmental samples to ensure a more accurate risk assessment.

## Microbial Corrosion Screen (Water, Swab, or Solid/Sludge)

- Biological Activity Reaction Test (BART) biotestors, manufactured by Drycon Bioconcepts Inc. (DBI), monitor biological activity of specific groups of bacteria as listed in the table below. Organism specific biotestors are inoculated with sample and are monitored for reaction changes described by manufacturer's certificates of analysis (COA) for each lot until activity is positive or determined to be not aggressive. Upon observation of a positive reaction, a semi-quantitative approximation (CFU/ml) of the microbial population being tested is matched and aggressivity is assigned as either aggressive, moderately aggressive, or not aggressive.

BART™ Biotestor	BART™ Microbial Population	Test Codes (Water/Swab/Bulk)	Aggressive	Moderate	Not Aggressive
APB	Acid Producing Bacteria	M001, M011, M021	475,000 - 14,000	4,500 - 75	10 - <2
IRB	Iron Related Bacteria	M003, M013, M033	570,000 - 9,000	2,200 - 25	8 - <1
SLYM	Slime Forming Bacteria	M004, M014, M024	1,750,000 - 67,000	13,000 - 500	100 - <20
SRB	Sulfate Reducing Bacteria	M005, M015, M025	2,200,2000 - 6,000	1,400 - 75	20 - <1
FLOR	Fluorescent Pseudomonads	M006, M016, M026	2,000,000 - 4,000	800 - 35	7 - <1
ALGE2	Algae	M008, M018, M028	500,000 - 10,000	1,000 - 100	<100
BART™ Test	BART™ Microbial Population	Test Codes (Water/Swab/Bulk)	Aggressive	Moderate	Not Aggressive
DN2	Denitrifying Bacteria	M002, M012, M022	>100,000 - 1,001	1,000 - 1	<1
N2	Nitrifying Bacteria	M007, M017, M027	>100,000 - 1,001	1,000 - 1	<1

\*DBI BART™ screens are not covered under ANAB scope of accreditation for test methods.

## Endotoxin (Water)

- Test Codes E010 Endotoxin Limit 10 EU/ml, E020 Endotoxin Limit 20 EU/ml.
- Test result less than test limit = Endotoxin Absent. Test result greater than or equal to test limit = Endotoxin Present.
- Assay performed using gel clot limulus amoebocyte lysate (LAL) test for bacterial endotoxin.
- Endotoxin Gel-Clot analyses is pending ANAB scope of accreditation for test methods.



### <797> Pharmaceutical Compounding Testing Compliance Only

- Test Code B061 Personal Aseptic Technique Media Fill. Samples incubate first at 30-35°C for  $\geq 7$  days, then move to 20-25°C for additional  $\geq 7$  days.
- Test Code C002 Surface Contact. Samples incubated at 30-35°C for  $\geq 48$  hr. for bacteria count & characterization workup and then move to 20-25°C for  $\geq 5$  days for fungal count and identification.
- Test Code C003 Fingertip Dab. Samples incubated at 30-35°C for  $\geq 48$  hr. for bacteria count & characterization workup and then move to 20-25°C for  $\geq 5$  days for fungal count and identification.
- The recorded Analysis Date on reports documents the date of final verification of required hold times and completion of workup for bacterial characterizations and fungal identification have followed <797> requirements prior to final data approval.

Microbiological Analyses Endnotes Revision 1-7



CONTACT INFORMATION		PROJECT INFORMATION	
Garratt-Callahan Company		G-C P.O. #:	TBD
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(650) 697 - 5811		Customer Name:	DGS
G-C Representative:	JOSEPH MAHFER	Street:	7575 METROPOLITAN DR STE 101
Territory Number:	0307	City:	SAN DIEGO
Sampling Date/Time:	4.17.2023	State:	CA
Sampler (if different from G-C Rep above):		Zip:	92108
E-mail Report to:	labreports@g-c.com	Copy Report to (optional):	J.MAHFER@G-C.COM

Page: 1 of: 3

FOR LAB USE ONLY:	SPECIAL INSTRUCTIONS/COMMENTS:		LEGIONELLA ANALYSIS										OTHER MISC. TESTING													
			Turn Around Time					vPCR					B011 - HPC Aerobic Bacteria	B011 - HPC Anaerobic Bacteria	GMS1 - CMS Waterborne Pathogen Screen	B022 - Total Coliform/E.Coli	B018 - Pseudomonas aeruginosa	B062 - Pseudomonas spp.	GC04 - Bacteria Corrosion Screen Bundle (Acid, Iron, Slime, Sulfate)	Possible Water Post-Disinfection Verification Testing (Next-day vPCR)	P003 - HPC B010, Pseudomonas	Other - Specify Lab Code*				
Batch No.:	Log-In By:	Sample No.	Sample Location/Description	L011 - Water Possible	L001 - Water Cooling Tower	L001 - Water Decorative Fountain	L010 - Water Whirlpool/Spas	L002 - SWAB Possible	L002 - SWAB Cooling Tower	L002 - SWAB Decorative Fountain	L002 - SWAB Whirlpool/Spas	P003 - Bulk Water Sample (Next Day)											P004 - Bulk Water Sample (Same Day)	B010 - HPC Aerobic Bacteria		
			POE, PH 7.91, TCL 2.06	X																						
			1ST FLOOR, MENSA WEST, CENTER SINK, PRE, CW	X																						
			1ST FLOOR, MENSA WEST, CENTER SINK, POST, TCL CW, TCL 0.2	X																						
			1ST FLOOR, MENSA WEST, CENTER SINK, POST, HW, TCL 0.2, 4'SS, 123.6	X																						
			1ST FL, MENSA WEST, CENTER SINK, SWAB					X																		
			2ND FL, MENSA WEST, CENTER SINK, PRE, HW, PRE	X																						
			2ND FL, MENSA WEST, CENTER SINK, POST, CW, TCL 14	X																						
			2ND FL, MENSA WEST, CENTER SINK, SWAB					X																		
			2ND FL, MENSA WEST, CENTER SINK, HW, POST, TCL 0.4	X																						
			2ND FL, MENSA WEST, LEFT SINK, SWAB					X																		

FOR LAB USE ONLY:		SPECIAL INSTRUCTIONS/COMMENTS:	LEGIONELLA ANALYSIS													OTHER MISC. TESTING										
Batch No.:	Log-In By:		Turn Around Time										vPCR													
				<input type="checkbox"/> Normal (7-10 days) <input checked="" type="checkbox"/> Rush (4 business days - additional fees apply)										Lp SGI & SG2-14												
Laboratory Number:	Sample No.	Sample Location/Description		L011 - Water Potable	L001 - Water Cooling Tower	L001 - Water Decorative Fountain	L010 - Water Whirlpool/Spa	L012 - Water Potable	L002 - SWAB Cooling Tower	L002 - SWAB Decorative Fountain	L002 - SWAB Whirlpool/Spa	P003 - Bulk Water	Sample (Next Day)	Sample (Same Day)	B010 - HPC Aerobic Bacteria	B011 - HPC Anaerobic Bacteria	CM51 - CMS Waterborne Pathogen Screen	B022 - Total Coliform/E.Coli	B018 - Pseudomonas aeruginosa	B062 - Pseudomonas spp.	GC04 - Bacteria Corrosion Screen Bundle (Acid, Iron, Slime, Sulfate)	Potable Water Post-Disinfection Verification Testing (Next-day vPCR)	P003 - HPC B010, Pseudomonas	Other - Specify Lab Code*		
	11	2nd FL, Womans RR, EAST, HW, PRE LEFT SINK		X										X												
	12	2nd FL, Womans RR, EAST, HW, POST, 475CL, 1297, TCL-02, LEFT SINK		X										X												
	13	2nd FL, Womans RR, EAST, CW, POST, TCL, 10, LEFT SINK		X										X												
	14	SUITE 200, Kitchen, Sink, Swab						X																		
	15	J30, MOPSINK, PRE, CW		X											X											
	16	J30, MOPSINK, POST, CW, PRE, PH 7.49, TCL-03																								
	17	J30, MOPSINK, Swab						X																		
	18	ROOF, CW, HOSE BIB, TCL 15, PH 7.3		X																						
		Pure Boiler Tank UWS 4.1 2L		X																						
	20	ROOF, CW expansion tank (HW), TCL 21		X																						

\*Lab Codes (Bulk Water Samples): B010 - HPC Aerobic Bacteria, B011 - HPC Anaerobic Bacteria, B022 - Total Coliform/E.Coli, B018 - Pseudomonas aeruginosa, B062 - Pseudomonas spp., GC04 - Bacteria Corrosion Screen Bundle (Acid, Iron, Slime, Sulfate), M001 (Acid-Producing), M002 (Denitrifying), M003 (Iron-Related), M004 (Slime-Forming), M005 (Sulfate-Reducing), M006 (Fluorescent Pseudomonas), B018 (Pseudomonas aeruginosa), B062 (Pseudomonas species), CMS1 (CMS Healthcare Pathogen Screen), B026 (Endotoxin Screening), F018 (Aspergillus Culture), F019 (Fusarium Culture), B014 (Staphylococcus aureus)

NOTE: Unlike for water samples, SWAB samples submitted for Legionella testing cannot be processed for HPC on the same sample due to differing sample preparation protocols. If HPC is needed, a separate SWAB sample must be submitted for an additional fee.

Relinquished by: <u>Joseph Mahler</u>	Received by: <u>PLD</u>	Lab Comments:
Date/Time: <u>2/17/23</u>	Date/Time: <u>2/18/23 10</u>	

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Sampling Date/Time:	4.17.2023	Street:	7575 Metropolitan Dr. STE 101
Sampler (if different from G-C Rep above):		City:	SAN DIEGO
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		Zip:	92104
		Copy Report to (optional):	jmahfetz@g-c.com

Page: 3 of: 3

FOR LAB USE ONLY:	SPECIAL INSTRUCTIONS/COMMENTS:		LEGIONELLA ANALYSIS										OTHER MISC. TESTING															
			Turn Around Time										vPCR															
			<input type="checkbox"/> Normal (7-10 days) <input checked="" type="checkbox"/> Rush (4 business days - additional fees apply)										Lp	SG1 & SG2-14														
Batch No.:	Log-In By:	Laboratory Number:	Sample No.	Sample Location/Description	L011 - Water Potable	L001 - Water Cooling Tower	L001 - Water Decorative Fountain	L010 - Water Whirlpool/Spas	Whirlpool/Spas	Potable	L002 - SWAB Cooling Tower	L002 - SWAB Decorative Fountain	L002 - SWAB Whirlpool/Spas	P003 - Bulk Water Sample (Next Day)	P004 - Bulk Water Sample (Same Day)	B010 - HPC Aerobic Bacteria	B011 - HPC Anaerobic Bacteria	CMS1 - CMS Waterborne Pathogen Screen	B022 - Total Coliform/E.Coli	B018 - Pseudomonas aeruginosa	B062 - Pseudomonas spp.	GC04 - Bacteria Corrosion Screen Bundle (Acid, Iron, Slime, Sulfate)	Potable Water Post-Disinfection	Verification Testing (Next-day vPCR)	P003, HPC B010, Pseudomonas	Other - Specify Lab Code*		
			21	ROOF, EAST HOSE BIB, CW, TCL @ 1, pH 7.7	X											X												
			22	1ST FLOOR, J-11, MOP SINK, HW, PRE	X											X												
			23	1ST FLOOR, J-11, MOP SINK HW, POST, TCL @ 1, 2, 25	X											X												
			24	1ST FLOOR, J-11, MOP SINK, CW, POST, TCL, pH 7.7	X											X												
			25	1ST FLOOR J-11, MOP SINK, SWAB						X																		
			6																									
			7																									
			8																									
			9																									
			10																									

FOR LAB USE ONLY:		SPECIAL INSTRUCTIONS/COMMENTS:		LEGIONELLA ANALYSIS										OTHER MISC. TESTING									
Batch No.:				Turn Around Time <input type="checkbox"/> Normal (7-10 days) <input type="checkbox"/> Rush (4 business days - additional fees apply)										vPCR Lp SGI & SG2-14									
Log-In By:				L011 - Water Potable	L001 - Water Cooling Tower	L001 - Water Decorative Fountain	L010 - Water Whirlpool/Spas	L012 - Water Potable	L002 - SWAB Cooling Tower	L002 - SWAB Decorative Fountain	L002 - SWAB Whirlpool/Spas	P003 - Bulk Water Sample (Next Day)	P004 - Bulk Water Sample (Same Day)	B010 - HPC Aerobic Bacteria	B011 - HPC Anaerobic Bacteria	CMS1 - CMS Waterborne Pathogen Screen	B022 - Total Coliform/E.Coli	B018 - Pseudomonas aeruginosa	B062 - Pseudomonas spp.	GC04 - Bacteria Corrosion Screen Bundle (Acid, Iron, Sulfate)	Potable Water Post-Disinfection Verification Testing (Next-day vPCR)	P003 - HPC B010, Pseudomonas	Other - Specify Lab Code*
Laboratory Number:				Sample No.	Sample Location/Description																		
		11																					
		12																					
		13																					
		14																					
		15																					
		16																					
		17																					
		18																					
		19																					
		20																					

**\*Lab Codes (Bulk Water Samples):** B010 - HPC Aerobic Bacteria, B011 - HPC Anaerobic Bacteria, B022 - Total Coliform/E.Coli, B018 - Pseudomonas aeruginosa, B062 - Pseudomonas spp., GC04 - Bacteria Corrosion Screen Bundle (Acid, Iron, Slime, Sulfate), M001 (Acid-Producing), M002 (Denitrifying), M003 (Iron-Related), M004 (Slime-Forming), M005 (Sulfate-Reducing), M006 (Fluorescent Pseudomonas), B018 (Pseudomonas aeruginosa), B062 (Pseudomonas species), CMS1 (CMS Healthcare Pathogen Screen), B026 (Endotoxin Screening), F018 (Aspergillus Culture), F019 (Fusarium Culture), B014 (Staphylococcus aureus)

**NOTE:** Unlike for water samples, SWAB samples submitted for Legionella testing cannot be processed for HPC on the same sample due to differing sample preparation protocols. If HPC is needed, a separate SWAB sample must be submitted for an additional fee.

Relinquished by:	<i>Joseph Mahfey</i>	Received by:	<i>YD</i>	Lab Comments:
Date/Time:	<i>2/17/2023</i>	Date/Time:	<i>4/18/25/2023</i>	

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