



Environmental Safety Technologies, Inc.

Report Date: 6/24/2021
Microbiological Analyses



1815 Brownsboro Road., Suite 200
Louisville, Kentucky 40206
Phone: 502.893.6080
Fax: 502.893.6088
Email: est@estechlab.com
Web: www.estechlab.com

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

Job Site:
Lane Community College Main
4000 E 30th Ave
Eugene, OR 97405

Batch Number: 210617027
Sampled By: Justin Kari
P.O. Number: 382942
Report Status: Original

Client Sample ID: 1
Location: Cooling Tower Main

Lab Sample ID: 287710

Collection Date: 6/15/2021

Receive Date: 6/17/2021

Analyte	Test Code	Media Type	Sample Result	Units	Detection Limit	Analysis Date	Priority
Legionella pneumophila SG1	L001 - Legionella Non-Potable Water	GVPC	None Detected	CFU/mL	10 CFU/mL	6/24/2021	Standard
Legionella pneumophila SG2-14	L001 - Legionella Non-Potable Water	GVPC	None Detected	CFU/mL	10 CFU/mL	6/24/2021	Standard
Legionella non-pneumophila	L001 - Legionella Non-Potable Water	GVPC	None Detected	CFU/mL	10 CFU/mL	6/24/2021	Standard

Environmental Safety Technologies, Inc.

Richard D. Miller, Ph.D.
President, Chief Scientific Officer



Report Notes Applicable to All Analyses

- All samples were received in accordance with recommended transit times as detailed in Environmental Safety Technologies Sample Guidelines located online at www.estechlab.com. Samples received outside of the suggested sample transit times processed with the approval of the customer, with the understanding that transit delay may affect the viability of the sample results.
- Data are not corrected based on results for blank samples. Results relate only to items tested.
- 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"; amounts below this limit are reported as "Absent". Scheduled analyses are performed during routine business hours. Otherwise, analyses are completed on the next business day.
- Results apply to samples as received.
- 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

- Media Types : ACN = Acinetobacter CHROMagar™, BART = Biological Activity Reaction Test, BCSA = *Burkholderia cepacia* Selective Agar, BCYE = Buffered Charcoal Yeast Extract Agar, Cetrimide = *Pseudomonas aeruginosa* Selective Agar, GVPC = BCYE Selective Agar with antibiotics (Glycine, Vancomycin, Polymyxin, and Cycloheximide), Leeds = Leeds Acinetobacter Medium, ME* = Malt Extract with 0.01% Chloramphenicol, R2A = Reasoner's 2A 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, 7H11S = Middlebrook 7H11 Selective Agar.
- Units: C= Celsius, CFU = Colony Forming Unit, F = Fahrenheit, g = gram, L = liter, m = meter, ml = milliliter, SG = serogroup, N/A = Not Applicable, N/R = Not Requested.
- Miscellaneous: AIHA-LAP, LLC = American Industrial Hygiene Association - Laboratory Accreditation Program, Limited Liability Company, EMLAP = Environmental Microbiology Laboratory Accreditation Program (ISO/IEC 17025:2017), ELITE = Environmental *Legionella* Isolation Techniques Evaluation Program, HPC = Heterotrophic Plate Count, N/A = Not Applicable, N/R = Not Requested.

Bacteria – Standard Heterotrophic Plate Counts for Water Samples

- Test Codes: B010 (Aerobic), B011 (Anaerobic)
- Total viable heterotrophic plate bacteria counts are obtained using the spread plate method.
- Samples are routinely processed on SMA under aerobic conditions at 35°C for 2-4 days or anaerobically at 35°C for 2-4 days using BD GasPak™ EZ 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.
- Anaerobic plate counts are obtained using BD GasPak™ EZ Anaerobic Gas Generating Systems.

Legionella Culture Analysis

- Test Codes: Non-potable L001 (Bulk-Liquid/Water), L002 (Swab), L003 (Bulk-Solid), L099 (Air)
- Test Codes: Potable L011 (Bulk-Liquid/Water), L012 (Swab), L013 (Bulk-Solid)
- Total Viable *Legionella*: Viable *Legionella* counts (*Legionella pneumophila* SG1, *Legionella pneumophila* SG2-14, 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*.



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

- Test Codes and Organisms: Acid Producing Bacteria (M001, M011, M021), Denitrifying Bacteria (M002, M012, M022), Iron Related Bacteria (M003, M013, M023), Slime Forming Bacteria (M004, M014, M024), Sulfate Reducing Bacteria (M005, M015, M025), Fluorescent Pseudomonads (M006, M016, M026), Nitrifying Bacteria (M007, M017, M027) and Algae (M008, M018, M028).
- Daily monitoring of microbial reactions using organism specific BART™ testers (Dryocon Bioconcepts Inc.) enables the semi-quantitative projection of population sizes and associated activities (aggressiveness). Observation durations range from two to nine days at room temperature as specified by each BART™ tester.
- These listed microbial corrosion screen test methods are not covered under AIHA LAP, LLC's scope of accreditation.

Environmental Pathogen Monitoring - Listeria and Salmonella Immunoassay Tests

- Test Code B041: *Listeria*. Swabs are enriched in indicator broth for enhanced recovery and selection.
- Test Code B041: *Salmonella*. Swabs are enriched in indicator broth for enhanced recovery and selection.
- Test methods AOAC Research Institute approved for monitoring environmental surfaces.

Pathogen Screen Culture Analysis – Potable Water Samples

- Test Code: PS01/GC10 (Water)
- Pathogen Screen Analyses on selective agar: *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).

Pseudomonas aeruginosa and other *Pseudomonas* species Culture Analysis

- Test Codes: B018 (Water), B019 (Swab); *Pseudomonas aeruginosa* isolation and identification on Cetrimide selective agar incubated for 2-4 days at 41°C.
- Test Codes: B062 (Water), B063 (Swab); *Pseudomonas* species screen on Cetrimide selective agar incubated for 5-7 days at 30°C.

Pseudomonas aeruginosa Screen; Presence/Absence

- Test Codes: B052 (Water), B053 (Swab)
- Presence/Absence using IDEXX™ test reagents for the detection *P. aeruginosa* (Pseudalert®)

Sewage Contamination Screens

- Tests are applicable for the detection of environmental fecal contamination, not for potable drinking water certification.

Total Coliform & *E. coli*; Presence/Absence

- Test Codes: B022 (Water), B023 (Swab)
- Presence/Absence using IDEXX™ test reagents for the detection of Total Coliforms and *E. coli* (Colisure®)

Sewage Screen – *E. coli* & Enterococci; Presence/Absence

- Test Codes: B012 (Water), B013 (Swab)
- Presence/Absence using IDEXX™ test reagents for the detection of *E. coli* (Colisure®)
- Presence/Absence using IDEXX™ test reagents for the detection of Enterococci (Enterolert®).

Sewage Screen – Enterococci; Presence/Absence

- Test Codes: B024 (Water), B025 (Swab)
- Presence/Absence using IDEXX™ test reagents for the detection of Enterococci (Enterolert®).



**Environmental
Safety
Technologies**

**MICROBIOLOGICAL TESTING
CHAIN-OF-CUSTODY FORM**

CONTACT INFORMATION			PROJECT INFORMATION		
Garratt-Callahan Company 4545 Commerce Circle SW, Atlanta, GA 30336 (650) 697 - 5811			G-C P.O. #:	382942	
G-C Representative: Justin Kari			Customer Number:	460460	
Territory Number: 0106	Sampler (if different from G-C Representative):		Customer Name:	Lane Community College Main	
E-mail Report to: labreports@g-c.com	Copy Report to (optional): jkari@g-c.com		Street:	4000 E 30th Ave	
Page 1 of 1			City:	Eugene	
			State:	OR	
			Zip:	97405	

FOR LAB USE ONLY:	SPECIAL INSTRUCTIONS/COMMENTS:		LEGIONELLA ANALYSIS										OTHER TESTS			
	Batch No.:	Log-In By:	Turn Around Time													
Laboratory Number:	Sample No.	Sample Location/Description	<input type="checkbox"/> Normal (7-10 days) <input type="checkbox"/> Rush (4 business days - additional fees apply)													
			L010 - Poable	L001 - Cooling Tower	L015 - Decorative Fountain	L012 - Whirlpool/Spas	L011 - SWAB Poable	L003 - SWAB Cooling Tower	L016 - SWAB Decorative Fountain	L012 - SWAB Whirlpool/Spas	B010 - HPC Aerobic Bacteria	B011 - HPC Anaerobic Bacteria	GC10 - CMS Waterborne Pathogen Screen	B022 - Total Coliform/E Coli	GC04 - Bacteria Corrosion Screen Bundle (Acid, Iron, Slime, Sulfate)	Other - Specify Lab Code*
	1	Cooling Tower Main		X												
	2															
	3															
	4															
	5															
	6															
	7															
	8															
	9															
	10															
	11															
	12															
	13															
	14															
	15															
	16															
	17															
	18															
	19															
	20															

Relinquished by: <i>[Signature]</i>	Received by: <i>[Signature]</i>	Lab Comments:
Date/Time: 6/7/21 6/15 1000AM	Date/Time: 6/17/21 10	