



Mould Assessment

Elliot Hall – Acadia University

Prepared for:

Sodexo Canada

15 University Ave
Wolfville, Nova Scotia, B4P 2R6

October 19, 2023

Pinchin File: 0331889



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1.0 INTRODUCTION AND SCOPE

1.1 Statement of Understanding

Pinchin Ltd. (Pinchin) was retained by Sodexo Canada (the Client) to conduct airborne mould sampling at Elliot Hall within the Laboratory E316 on the Acadia University campus located in Wolfville, Nova Scotia. This sampling was conducted by Pinchin on September 7, 2023. Sample results indicated that airborne mould was negatively impacting the air quality in the sample locations. These sample results were verbally conveyed to the Client. The Client subsequently requested that a mould assessment be conducted to determine if mould growth was present and provide recommendations for remediation. Pinchin conducted the mould assessment on September 25, 2023.

1.2 Scope of Work

Pinchin performed the airborne mould sampling on September 7, 2023 and the mould assessment on September 25, 2023. The scope of this investigation was limited to the Elliot Laboratory in Room E316 and the adjacent Hallway.

The investigation involved the following activities:

- Review of occupant and management concerns.
- Spot readings of moisture content of building materials.
- Walkthrough site review for factors that could degrade air quality, including water damage or mould growth.
- Collection and analysis of the following (including outdoor reference and field blank samples):
 - Five spore trap samples on September 7, 2023
 - Four spore trap samples on September 25, 2023

2.0 METHODOLOGY

2.1 Interviews and Site Reviews

Pinchin interviewed building staff, to discuss the history of the building, maintenance practices, water damage and any indoor air quality complaints.

Pinchin performed a walkthrough site review for indications of suspect mould growth and/or water damage on accessible building materials and/or contents, paying particular attention to areas where past water damage had been reported.



The investigator performed minor intrusive work to inspect concealed conditions behind vinyl baseboards. No visible damages were left in the room after inspection.

The investigator used a moisture meter to test for elevated moisture levels in building materials.

2.2 Test Methods and Criteria

The following table presents the parameters measured in this investigation, the instruments and sampling/analytical methods used, the applicable units of measurement, and the criteria selected by Pinchin for the evaluation of the results.

Table I – Parameters Tested, Recommended Limits and Instruments or Methods Used

Parameter	Unit of Measurement	Recommended Limit	Instrumentation or Test Method
Moisture in building materials (Note: detects surface moisture only, may not detect deeper moisture)	% moisture	Threshold for mould growth: ¹ Drywall, 0.7% Wood materials, 17%	Tramex® Moisture Encounter
Airborne mould (spore trap method)	Spores per cubic metre of air	Compare test area to reference areas and outdoors ² Consider water-damage indicator moulds	Allergenco-D® sampler, laboratory analysis by Direct Microscope Examination

All direct-reading instruments were calibrated before use; all air sampling pumps were calibrated before and after use.

2.3 Laboratory Based Test Methods

The analysis for mould was performed at the Pinchin Environmental Microbiology Laboratory, Mississauga. The Pinchin laboratory is independently accredited to ISO/IEC 17025:2017 for mould and bacteria analysis, by the American Industrial Hygiene Association Laboratory Accreditation Program LLC (AIHA LAP LLC) (Lab ID 158835)³ and the Quebec government (Lab ID 495).⁴

1 Macher, J. (Ed): Bioaerosols, Assessment and Control. Cincinnati OH: American Conference of Governmental Industrial Hygienists, 1999.

2 Health Canada: Fungal Contamination in Public Buildings: Health Effects and Investigation Methods. Ottawa ON: Health Canada, 2004.

3 Accredited by the American Industrial Hygiene Association Laboratory Accreditation Program LLC (AIHA LAP LLC) under the Environmental Microbiology Laboratory Accreditation Program (EMLAP), for Bulk, Surface and Air testing for moulds, Escherichia coli, Legionella by the ISO 11731 method and for Legionella pneumophila by qPCR ISO 12869 method (Lab ID 158835).

4 Accredited by the Quebec government under the Programme d'accréditation des laboratoires d'analyses (PALA) program for Air Microbiology – domains 601, 603, 604, 605, 606.



3.0 FINDINGS

3.1 Results of Interviews

Building Staff reported the following:

- A water leak from the ceiling occurred recently above the south doorway of Laboratory Room E316 in Elliot Hall.
- Since the leak, new drywall has been installed above the south doorway exterior. New drywall was also installed in the interior of the room on the southern ceiling corner adjacent to the doorway.
- The paint and drywall on the ceiling is noted to be chipping in various locations.
- Renovations were conducted in the Laboratory in 2017.

3.2 Airborne Mould Sampling – September 7, 2023

On September 7, 2023 Pinchin collected airborne mould samples in Room E316, Outside Room E303, and in the north end of the Hallway. In addition, an outdoor reference and a field blank sample were also collected. The analytical certificates for the mould tests collected on September 7, 2023 are given in Appendix I.

Generally, the composition and concentration of mould recovered from indoor samples should be similar to the composition and concentration of the mould recovered from the outdoor reference sample. Many elements inside a building can affect the concentration and composition of indoor mould samples. These elements include occupant activities, furnishings and the amount of air exchange.

The outdoor total airborne mould spore concentration was 12, 000 spores/m³. The concentrations of the indoor samples ranged from 2,200 – 3,800 spores/m³. The concentrations of each of the indoor samples were less than the concentration of the outdoor reference sample. The compositions of the indoor samples differed from the composition of the outdoor reference sample. Chaetomium-like spores were present in Room E316 and *Stachybotrys* spores were identified Outside of Room E316 and in the north end of the Hallway. Both these spores are typically not present in outdoor samples and therefore when they are identified in indoor samples they can be indicative of active mould growth.

Sample results suggest airborne mould levels were negatively impacting the air quality in each sample location on the sampling day.

3.3 Results of Site Reviews and Testing – September 25, 2023

The Client requested for a mould assessment to be completed once the results of the air sampling conducted on September 7, 2023 were conveyed. This section presents the findings of the walkthrough investigation and any tests for mould conducted on September 25, 2023. The analytical certificates for the mould tests collected on September 25, 2023 are given in Appendix II.

Table II – Elliot Hall Laboratory Room E316





Extent of Mould Growth	< 1 ft ²	Extent of Water Damage Including Mould Growth	25 ft ²
 <p>Photo 1 - South doorway where water leak occurred. Visible mould found behind vinyl baseboards on either side of door indicated by arrows.</p>	 <p>Photo 2 - South of doorway where water leak occurred and new drywall has been put in place. Water stains were noted on the new drywall.</p>		
 <p>Photo 3 – Closer view of water staining on newly installed drywall.</p>	 <p>Photo 4 – Mould growth behind vinyl baseboard adjacent to south door. Mould was present on both sides of the door.</p>		



Photo 5 – No mould growth behind baseboards in South corner directly below new drywall.



Photo 6 – General view of the Lab.



Photo 7 – Paint/Plaster peeling on the ceiling.



Photo to 8 –Cracks noted around ceiling vent.

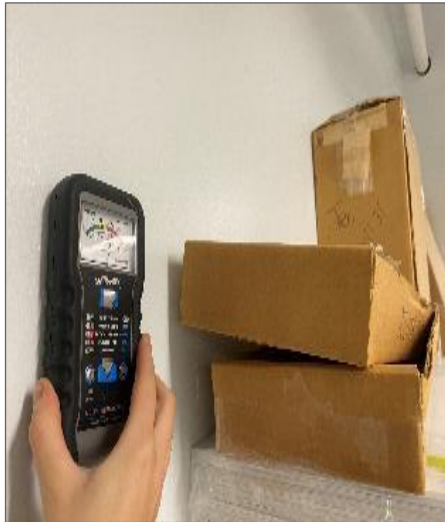


Photo 9 – Elevated moisture detected on west wall adjacent to shelving unit.



Photo 10 – West wall with elevated moisture readings approximately at six feet from ground, covering 9 ft² of drywall.

Moisture Measurements

Material/Location	Results	Material	Results
Drywall/East Wall	>0.7% - WET	All other accessible drywall walls	<0.7% - DRY

Sample Log

Sample Type/ Location	Sample No.	Result
Airborne Mould Spore Trap/ Elliot Room E316	5564070	730 spores/m ³

Observations and Comments

- Approximately 1 ft² of visible mould growth was observed on drywall behind vinyl baseboards on either side of the south door. No mould was found behind other baseboards.
- Elevated moisture was detected on the west drywall near a shelving unit and wall cabinet. Elevated moisture was measured from six to nine feet from the ground, and approximately three feet wide.
- The paint and plaster on the ceiling was noted to be peeling in various locations.

Table II – Hallway

Extent of Mould Growth	None	Extent of Water Damage Including Mould Growth	2 ft ²
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Table II – Hallway



Photo 11 – South door to Room E316 where new drywall has been implemented.



Photo 12 – Water-stained ceiling tile in Hallway.



Photo 13 – Water-stained ceiling tiles in the Hallway.

Moisture Measurements

Material/ Location	Results		
Drywall/Hallway	<0.7% DRY		

Sample Log

Sample Type/Location	Sample No.	Result
Airborne Mould Spore Trap/ Hallway	5564214	8, 000 spores/m ³



Table II – Hallway

Observations and Comments

- Three water-stained ceiling tiles were observed.

Table II – Outdoors

Sample Type/Location	Sample No.	Result
Mould Air Sample/Outdoor	5564045	11,000 spores/m ³

3.4 Airborne Mould Sampling – September 25, 2023

On September 25, 2023 Pinchin collected airborne mould samples in Room E316 and Outside Room E316. In addition, an outdoor reference and a field blank sample were also collected. The analytical certificates for the mould tests collected on September 25, 2023 are given in Appendix II.

Generally, the composition and concentration of mould recovered from indoor samples should be similar to the composition and concentration of the mould recovered from the outdoor reference sample. Many elements inside a building can affect the concentration and composition of indoor mould samples. These elements include occupant activities, furnishings and the amount of air exchange.

The outdoor total airborne mould spore concentration was 11,000 spores/m³. The concentrations of the indoor samples ranged from 730 – 8,000 spores/m³. The concentrations of each of the indoor samples were less than the concentration of the outdoor reference sample. The compositions of the indoor samples differed from the composition of the outdoor reference sample. However, the spores identified do not present a concern at the concentrations measured.

Sample results suggest airborne mould levels were acceptable in each sample location on the sampling day.

4.0 DISCUSSION

4.1 Discussion of Water Damage and Mould Growth

Visible mould growth was detected behind the vinyl baseboards on either side of the south doorway. Mould growth was not found behind any other baseboards adjacent to the doorway. The mould growth was likely caused by the water leak that was reported to have occurred in this area.



Elevated moisture was detected on the west drywall near the north door, above the counter adjacent to the shelving unit. Condensation on the wall is likely the cause for the elevated moisture due to activities that occur in the lab and environmental requirements for a laboratory.

4.2 Mould Remediation and Site Reviews

Mould growth in buildings can be a risk factor for adverse health effects.⁵ The mould growth found in this investigation should be remediated as soon as possible following currently accepted procedures. Pinchin recommends that mould remediation follow the procedures set by the Canadian Construction Association (CCA).⁶ The work should be performed by a contractor with appropriate training, experience and insurance coverage. Ensure that remaining building materials are dry prior to reinstating mould-susceptible finishes, to prevent future mould growth.

4.3 Communication and Interim Risk Management

The findings of this report should be communicated to the occupants as recommended by current mould guidelines, and in workplaces, as mandated by occupational health and safety legislation. The Client should consider any interim risk management actions that would be appropriate under the circumstances, until the mould growth can be remediated. Interim risk management might include isolating an area of the building, or relocating persons experiencing adverse health effects or with greater sensitivity to mould.

5.0 RECOMMENDATIONS

Pinchin offers the following recommendations to improve air quality in this building and address any mould growth or other microbial contamination found. Pinchin would be pleased to assist with further investigations indicated by this investigation, make recommendations for remediation contractors, and provide services for the planning and review of the recommended remediation work.

1. Communicate the findings of this report to the occupants, staff, joint health and safety committee, tenants.
2. Consider any necessary steps for interim risk management.
3. Ensure that all sources of water infiltration have been identified and repaired as necessary.
4. Following CCA Level 1 mould abatement procedures remove all mould-impacted from wall on either side of the south doorway in Room E316. If during the removal additional

⁵ US Environmental Protection Agency: Mold Remediation in Schools and Commercial Buildings. US EPA. 2001.

⁶ Canadian Construction Association: Mould Guidelines for the Canadian Construction Industry, Ottawa, ON: CCA, 2004 (Revised 2018)



mould growth is observed than it should be removed following the appropriate level of mould abatement procedures as per the CCA.

5. Conduct further intrusive investigations in the following locations. If mould growth is discovered it should be remediated following the appropriate level of mould abatement procedures as per the CCA.
 - a. Water-stained drywall on the ceiling and wall in Room E315.
 - b. West wall in Room E315 where elevated moisture was measured.
6. Replace all water-stained ceiling tiles in the Hallway.
7. Clean the floors, other building surfaces, furnishings and contents in areas immediately adjacent to the remediation work area(s), following normal custodial practices.
8. Implement drying procedures as necessary. Ensure all surfaces are dry before installation of new finishes.

6.0 TERMS AND LIMITATIONS

This work was performed subject to the Terms and Limitations presented or referenced in the proposal for this project.

Information provided by Pinchin is intended for Client use only. Pinchin will not provide results or information to any party unless disclosure by Pinchin is required by law. Any use by a third party of reports or documents authored by Pinchin or any reliance by a third party on or decisions made by a third party based on the findings described in said documents, is the sole responsibility of such third parties. Pinchin accepts no responsibility for damages suffered by any third party as a result of decisions made or actions conducted. No other warranties are implied or expressed.

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Template: Master Report for Investigation of Mould Growth and IAQ, IEQ, January 27, 2022

APPENDIX I

Results of Mould Tests – September 7, 2023



2555 Meadowpine Blvd. Unit 2
Mississauga, ON L5N 6C3
T: (905) 363-0678
E: microbiolab@pinchin.com

Certificate of Analysis

Pinchin Environmental Microbiology Laboratory



Laboratoire d'analyse
accrédité par le
gouvernement du Québec



CUSTOMER: Adam Gallant

COMPANY: Pinchin Ltd

ADDRESS: 42 Dorey Avenue,
Dartmouth, NS B3B 0B1

PROJECT NAME:

TYPE OF SAMPLES: AllergencoD

NO. OF SAMPLES: 5

DATE COLLECTED: September 7, 2023

DATE RECEIVED: September 8, 2023

DATE ANALYSED: September 11, 2023

DATE REPORTED: September 13, 2023

PROJECT NO: 331889

LAB REFERENCE NO: m299754

ANALYST: Jaybeeramy Naiken, B.Sc.
Environmental Microbiologist

REVIEWER: Rafic Dulymamode, PhD
Laboratory Manager

CONDITION OF SAMPLES ON RECEIPT: Acceptable

Method of Analysis: Analysis of Air Samples for Fungal Spores (SOP: DME-SPT, Rev. 15, 16 May 2023)

This SOP is based on the method described in the AIHA's "Field Guide for the Determination of Biological Contaminants in the Environmental Samples" and also partially on the ASTM method D7391-20.

Results are not corrected for blanks. Estimation of the measurement of uncertainty is available upon request.

Comments/Observations (if any):

Notes:

1. The laboratory is not responsible for sample collection and sample information provided by the customer on the chain of custody.
2. The report applies to the samples submitted to the laboratory and, the result(s) relate only to sample(s) tested.
3. The report shall not be reproduced except in full, without written approval of the laboratory.
4. Services are subject to Pinchin Ltd. Standard Terms and Conditions for Laboratory Services.



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Laboratoire d'analyse
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gouvernement du Québec



DATE ANALYSED:

September 11, 2023

ANALYST: Jaybeeramy Naiken, B.Sc. 2

PROJECT NO: 331889
LAB REFERENCE NO: m299754

Customer Sample No:	5564625			5564616			5564683			5564674			2264748					
Lab Sample ID:	m299754-1			m299754-2			m299754-3			m299754-4			m299754-5					
Description	Outdoor			Room E316			Outside room E303			North end of Hallway			Blank					
Total Air Volume (L)	150			150			150			150			N/A					
% of Sample Counted	25.4			25.4			25.4			25.4			25.4					
Fungal spores identified	raw ct.	%	ct./m ³	raw ct.	%	ct./m ³	raw ct.	%	ct./m ³	raw ct.	%	ct./m ³	raw ct.	%	ct./m ³	raw ct.	%	ct./m ³
Alternaria/Ulocladium-like										1	1	26						
Ascospores, non-specified	94	20	2500	4	5	110	24	17	630	19	17	500						
Aspergillus/Penicillium-like	2	0	52	26	31	680	3	2	79	3	3	79						
Basidiospores, non-specified	314	68	8200	42	51	1100	83	57	2200	65	57	1700						
Bipolaris/Drechslera/ Exserohilum/Helminthosporium																		
<i>Botrytis</i>																		
Chaetomium-like				1	1	26												
Cladosporium	33	7	870	7	8	180	28	19	730	15	13	390						
Coprinus				1	1	26												
Epicoccum																		
Fusarium-like																		
Ganoderma				2	2	52	2	1	52	3	3	79						
Myxomycetes/Periconia/Rusts/Smuts	13	3	340				1	1	26	1	1	26						
Non-specified spores	1	0	26							6	5	160						
Oidium-like																		
Pithomyces-like							1	1	26									
Polythrincium	2	0	52															
Stachybotrys							3	2	79	1	1	26						
Pollens	3																	
Fungal fragments	1		26	1		26				1		26						
Non-fungal material	2			2			2			2								
Spores/sample	459			83			145			114								
TOTAL SPORES/M³	12000			2200			3800			3000			No fungal spores					
A.S. (SPORES/M³)	26			26			26			26								

Note: 1. Samples analysed at 600X magnification. 2. A.S. = Analytical Sensitivity
3. Total spores/m³ and counts/m³ reported to two significant figures where applicable



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Environmental Microbiology Laboratory
Chain of Custody Form

m299754

REPORT RESULTS TO	Contact: Adam Gallant		Dept: IEQ		
	Company: Pinchin Ltd		Tel: (902)-717-2502	Fax:	
	Mailing Address: 42 Dorey Ave		Email: agallant@pinchin.com		
	City: Dartmouth	Prov: NS	Postal Code: B3B 0B1	Customer Job / P.O. #: NA	
Special Instructions:				Project: 331889	
Report Language	English <input checked="" type="checkbox"/>	French <input type="checkbox"/>	No. Samples Submitted: 5	Invoice To: Accounts Payable	

ANALYSIS TYPES			
1. <input checked="" type="checkbox"/> Total Fungal Particulate (Spore Count and Identification)	5. <input type="checkbox"/> Bacteria (Quantification / Gram Staining)		
2. <input type="checkbox"/> Direct Microscope Examination (Fungal)	6. <input type="checkbox"/> Heterotrophic Plate Counts (HPC)		
3. <input type="checkbox"/> Direct Microscope Examination (Particulate):	a: Quantitative <input type="checkbox"/>	7. <input type="checkbox"/> E. coli / Total Coliforms	
	b: Qualitative <input type="checkbox"/>		
4. <input type="checkbox"/> Fungal Qualification & Identification (Anderson / RCS)	8. <input type="checkbox"/> Legionella	a: Culture <input type="checkbox"/>	b: QPCR <input type="checkbox"/>

Sample #	Description	Analysis Requested (e.g. 3a)	Date Sampled	Vol (L) or Area (cm ²)	TAT		FOR LAB USE ONLY LAB #
					REG.	RUSH	
5564615	Outdoor	1	09/07/23 1:22pm	150		X	m299754-1
5564616	Room E316	1	09/07/23 1:37pm	150		X	-2
5564683	Outside Room E303	1	09/07/23 1:49pm	150		X	-3
5564674	North End of Hallway	1	09/07/23 2:01pm	150		X	-4
5564748	Blank	1	09/07/23 1:46pm	0		X	-5

CHAIN OF CUSTODY	Collected by: Adam Gallant		Received by: CF	
	Relinquished by: Adam Gallant	Date/Time:	Date/Time: 9/8/23	CF
	Method of Shipment: Courier	Sample Condition Upon Receipt: Acceptable <input checked="" type="checkbox"/> Other (explain) <input type="checkbox"/>		

Authorized by: Adam Gallant Date: 09/07/23

9/13/23

Customer Signature MUST Accompany Request. Customer accepts Pinchin Ltd. Standard Terms and Conditions for laboratory Services (See Over)

Distribution: White = Laboratory, Yellow = Customer Copy

APPENDIX II

Results of Mould Tests – September 25, 2023



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Certificate of Analysis

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gouvernement du Québec



CUSTOMER: Kyra Kinsman

COMPANY: Pinchin Ltd.

ADDRESS: 42 Dorey Avenue
Dartmouth, NS B3B 0B1

PROJECT NAME:

TYPE OF SAMPLES: AllergencoD

NO. OF SAMPLES: 2

DATE COLLECTED: September 25, 2023

DATE RECEIVED: September 27, 2023

DATE ANALYSED: September 27, 2023

DATE REPORTED: September 27, 2023

PROJECT NO: 331889

LAB REFERENCE NO: m300966

ANALYST: Ahmad Baghaei, M.Sc.
Environmental Microbiologist

REVIEWER: Rafic Dulymamode, PhD
Laboratory Manager

CONDITION OF SAMPLES ON RECEIPT: Acceptable

Method of Analysis: Analysis of Air Samples for Fungal Spores (SOP: DME-SPT, Rev. 15, 16 May 2023)

This SOP is based on the method described in the AIHA's "Field Guide for the Determination of Biological Contaminants in the Environmental Samples" and also partially on the ASTM method D7391-20.

Results are not corrected for blanks. Estimation of the measurement of uncertainty is available upon request.

Comments/Observations (if any):

Notes:

1. The laboratory is not responsible for sample collection and sample information provided by the customer on the chain of custody.
2. The report applies to the samples submitted to the laboratory and, the result(s) relate only to sample(s) tested.
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4. Services are subject to Pinchin Ltd. Standard Terms and Conditions for Laboratory Services.



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Certificate of Analysis

Pinchin Environmental Microbiology Laboratory



Laboratoire d'analyse
accrédité par le
gouvernement du Québec



DATE ANALYSED:

September 27, 2023

ANALYST: Ahmad Baghaei, M.Sc.

PROJECT NO: 331889

LAB REFERENCE NO: m300966

Customer Sample No:	5564070			5564214																		
Lab Sample ID:	m300966-1			m300966-2																		
Description	Elliot Room 316			Outside Elliot Room 316																		
Total Air Volume (L)	150			150																		
% of Sample Counted	25.5			25.5																		
Fungal spores identified	raw ct.	%	ct./m ³	raw ct.	%	ct./m ³	raw ct.	%	ct./m ³	raw ct.	%	ct./m ³	raw ct.	%	ct./m ³	raw ct.	%	ct./m ³	raw ct.	%	ct./m ³	
Alternaria/Ulocladium-like																						
Ascospores, non-specified																						
Aspergillus/Penicillium-like	2	7	52	14	5	370																
Basidiospores, non-specified	26	93	680	239	79	6300																
Bipolaris/Drechslera/ Exserohilum/Helminthosporium																						
<i>Botrytis</i>																						
Chaetomium-like																						
<i>Cladosporium</i>				11	4	290																
<i>Coprinus</i>				7	2	180																
<i>Epicoccum</i>																						
Fusarium-like																						
<i>Ganoderma</i>				2	1	52																
Myxomycetes/Periconia/Rusts/Smuts				24	8	630																
Non-specified spores				2	1	52																
Oidium-like																						
Pithomyces-like				1	0	26																
<i>Polythrincium</i>				2	1	52																
<i>Stachybotrys</i>																						
Pollens																						
Fungal fragments				2		52																
Non-fungal material	1			4																		
Spores/sample	28			302																		
TOTAL SPORES/M³	730			8000																		
A.S. (SPORES/M³)	26			26																		

Note: 1. Samples analysed at 600X magnification. 2. A.S. = Analytical Sensitivity
3. Total spores/m³ and counts/m³ reported to two significant figures where applicable



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Environmental Microbiology Laboratory
 Chain of Custody Form

m300966

REPORT RESULTS TO	Contact: Kyra Kinsman			Dept: IEQ	
	Company: Pinchin Ltd			Tel: (902)-210-9212 Fax:	
	Mailing Address: 42 Dorey Ave			Email: kkinsman@pinchin.com	
	City: Dartmouth	Prov: NS	Postal Code: B3B 0B1	Customer Job / P.O. #: NA	
Special Instructions: Please cc: simcintyre@pinchin.com and agallant@pinchin.com				Project: 331889.000	
Report Language		English <input checked="" type="checkbox"/>	French <input type="checkbox"/>	No. Samples Submitted: 2	Invoice To: Accounts Payable

ANALYSIS TYPES					
1. <input checked="" type="checkbox"/> Total Fungal Particulate (Spore Count and Identification)		5. <input type="checkbox"/> Bacteria (Quantification / Gram Staining)			
2. <input type="checkbox"/> Direct Microscope Examination (Fungal)		6. <input type="checkbox"/> Heterotrophic Plate Counts (HPC)			
3. <input type="checkbox"/> Direct Microscope Examination (Particulate):		7. <input type="checkbox"/> E. coli / Total Coliforms			
		a: Quantitative <input type="checkbox"/>		b: Qualitative <input type="checkbox"/>	
4. <input type="checkbox"/> Fungal Qualification & Identification (Anderson / RCS)		8. <input type="checkbox"/> Legionella		a: Culture <input type="checkbox"/>	
				b: QPCR <input type="checkbox"/>	

Sample #	Description	Analysis Requested (e.g. 3a)	Date Sampled	Vol (L) or Area (cm ²)	TAT		FOR LAB USE ONLY LAB #
					REG.	RUSH	
5564070	Elliot Room 316	1	Sept 25 2023	150		X	m300966-1
5564214	Outside Elliot Room 316	1	Sept 25 2023	150		X	-2

CHAIN OF CUSTODY	Collected by: Kyra Kinsman			
	Relinquished by: Kyra Kinsman	Date/Time: Sept 25 2023 22:00	Received by: CF	Date/Time: 9/27/23 9:18
	Method of Shipment: Courier		Sample Condition Upon Receipt: Acceptable <input type="checkbox"/> Other (explain) <input type="checkbox"/>	

Handwritten signature and date: 9/27/23

Authorized by: **Kyra Kinsman** Date: **September 25 2023**

Customer Signature MUST Accompany Request. Customer accepts Pinchin Ltd. Standard Terms and Conditions for laboratory Services (See Over)

Distribution: White = Laboratory, Yellow = Customer Copy



2555 Meadowpine Blvd. Unit 2
Mississauga, ON L5N 6C3
T: (905) 363-0678
E: microbiolab@pinchin.com

Certificate of Analysis

Pinchin Environmental Microbiology Laboratory



Laboratoire d'analyse
accrédité par le
gouvernement du Québec



CUSTOMER: Kyra Kinsman

COMPANY: Pinchin Ltd.

ADDRESS: 42 Dorey Avenue
Dartmouth, NS B3B 0B1

PROJECT NAME:

TYPE OF SAMPLES: AllergencoD

NO. OF SAMPLES: 2

DATE COLLECTED: September 25, 2023

DATE RECEIVED: September 27, 2023

DATE ANALYSED: September 27, 2023

DATE REPORTED: September 27, 2023

PROJECT NO: 330548

LAB REFERENCE NO: m300998

ANALYST: Lubov Beliakov, CMS (PhD)
Environmental Microbiologist

REVIEWER: Rafic Dulyamode, PhD
Laboratory Manager

CONDITION OF SAMPLES ON RECEIPT: Acceptable

Method of Analysis: Analysis of Air Samples for Fungal Spores (SOP: DME-SPT, Rev. 15, 16 May 2023)

This SOP is based on the method described in the AIHA's "Field Guide for the Determination of Biological Contaminants in the Environmental Samples" and also partially on the ASTM method D7391-20.

Results are not corrected for blanks. Estimation of the measurement of uncertainty is available upon request.

Comments/Observations (if any):

Notes:

1. The laboratory is not responsible for sample collection and sample information provided by the customer on the chain of custody.
2. The report applies to the samples submitted to the laboratory and, the result(s) relate only to sample(s) tested.
3. The report shall not be reproduced except in full, without written approval of the laboratory.
4. Services are subject to Pinchin Ltd. Standard Terms and Conditions for Laboratory Services.



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DATE ANALYSED:

September 27, 2023

ANALYST: Lubov Beliakov, CMS (PhD)

PROJECT NO: 330548

LAB REFERENCE NO: m300998

Customer Sample No:	5564045	5564215																				
Lab Sample ID:	m300998-1	m300998-2																				
Description	Outdoor	Field Blank																				
Total Air Volume (L)	150	N/A																				
% of Sample Counted	25.4	25.4																				
Fungal spores identified	raw ct.	%	ct./m ³	raw ct.	%	ct./m ³	raw ct.	%	ct./m ³	raw ct.	%	ct./m ³	raw ct.	%	ct./m ³	raw ct.	%	ct./m ³	raw ct.	%	ct./m ³	
Alternaria/Ulocladium-like	3	1	79																			
Ascospores, non-specified	59	14	1500																			
Aspergillus/Penicillium-like	9	2	240																			
Basidiospores, non-specified	288	69	7500																			
Bipolaris/Drechslera/ Exserohilum/Helminthosporium																						
Botrytis	3	1	79																			
Chaetomium-like																						
Cladosporium	28	7	730																			
Coprinus	3	1	79																			
Epicoccum	3	1	79																			
Fusarium-like																						
Ganoderma	7	2	180																			
Myxomycetes/Periconia/Rusts/Smuts	8	2	210																			
Non-specified spores	1	0	26																			
Oidium-like	4	1	110																			
Pithomyces-like	1	0	26																			
Polythrincium																						
Stachybotrys																						
Pollens																						
Fungal fragments	2		52																			
Non-fungal material	2																					
Spores/sample	417																					
TOTAL SPORES/M³			11000	No fungal spores																		
A.S. (SPORES/M³)			26																			

Note: 1. Samples analysed at 600X magnification.

2. A.S. = Analytical Sensitivity

3. Total spores/m³ and counts/m³ reported to two significant figures where applicable



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Environmental Microbiology Laboratory
 Chain of Custody Form

m300998

REPORT RESULTS TO	Contact: Kyra Kinsman			Dept: IEQ	
	Company: Pinchin Ltd			Tel: (902)-210-9212	Fax:
	Mailing Address: 42 Dorey Ave			Email: kkinsman@pinchin.com	
	City: Dartmouth	Prov: NS	Postal Code: B3B 0B1	Customer Job / P.O. #: NA	
Special Instructions: Please cc: slmcintyre@pinchin.com and agallant@pinchin.com				Project: 331889 & 330548	
Report Language	English <input checked="" type="checkbox"/>	French <input type="checkbox"/>	No. Samples Submitted: 2	Invoice To: Accounts Payable	

ANALYSIS TYPES			
1. <input checked="" type="checkbox"/> Total Fungal Particulate (Spore Count and Identification)	5. <input type="checkbox"/> Bacteria (Quantification / Gram Staining)		
2. <input type="checkbox"/> Direct Microscope Examination (Fungal)	6. <input type="checkbox"/> Heterotrophic Plate Counts (HPC)		
3. <input type="checkbox"/> Direct Microscope Examination (Particulate):	a: Quantitative <input type="checkbox"/>	7. <input type="checkbox"/> E. coli / Total Coliforms	
	b: Qualitative <input type="checkbox"/>		
4. <input type="checkbox"/> Fungal Qualification & Identification (Anderson / RCS)	8. <input type="checkbox"/> Legionella	a: Culture <input type="checkbox"/>	b: QPCR <input type="checkbox"/>

Sample #	Description	Analysis Requested (e.g. 3a)	Date Sampled	Vol (L) or Area (cm ²)	TAT		FOR LAB USE ONLY LAB #
					REG.	RUSH	
5564045	Outdoor	1	Sept 25 2023	150		X	m300998-1 -2
5564215	Field Blank	1	Sept 25 2023	150		X	

CHAIN OF CUSTODY	Collected by: Kyra Kinsman			
	Relinquished by: Kyra Kinsman	Date/Time: Sept 25 2023 22:30	Received by: CF	Date/Time: 9/27/23 10:01
	Method of Shipment: Courier		Sample Condition Upon Receipt: Acceptable <input checked="" type="checkbox"/> Other (explain) <input type="checkbox"/>	

✓ 9/27/23

Authorized by: **Kyra Kinsman** Date: **September 25 2023**

Customer Signature MUST Accompany Request. Customer accepts Pinchin Ltd. Standard Terms and Conditions for laboratory Services (See Over)

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