Mold Control Panama
A division of Industrial Solutions & Supply Corp.

Data, Interpretation and Recommendations of Indoor Mold Testing & Laboratory Analysis

Project Name: [redacted]

Sampling Date: January 2, 2020 **Document Date:** January 12, 2020

Summary & Assessment

Six air sample tests were taken in the building on the morning of January 2, 2020

1) Main Floor reception area
2) 5th floor office area
3) 5th floor office cafeteria area
4) 4th floor executive offices
5) 4th floor common area, by stairwell 4th floor
6) 4th floor new offices, main meeting room at entry

A. Common Area, Floor 4/3: the total mold spore count in this area has dropped from ~5,400 spores/m3 in our August 2019 test to ~3,000 spores/m3 in our January 2020 test. Positive direction.

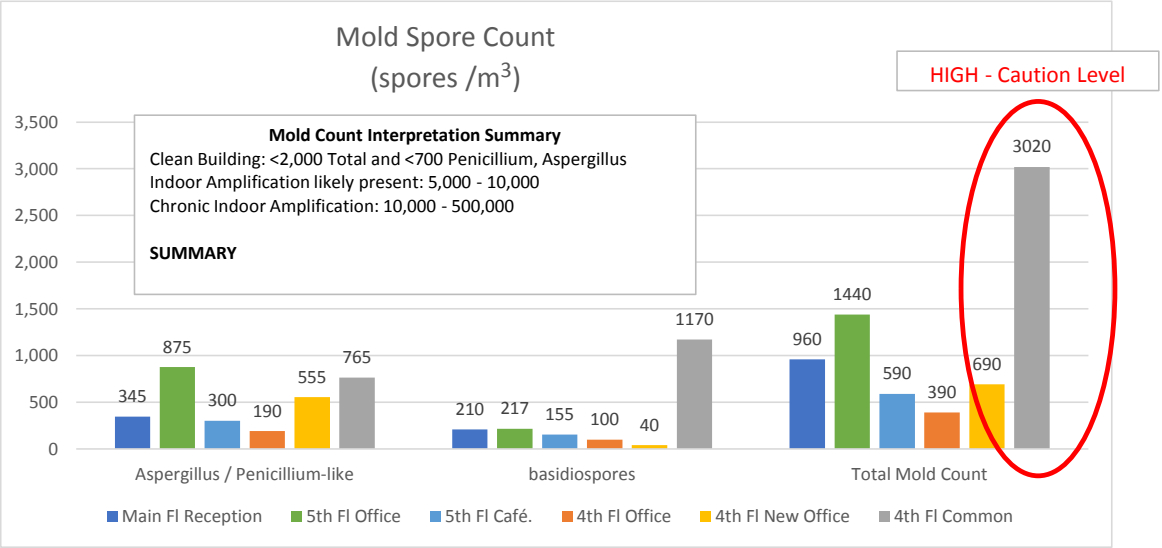
B. 4th Floor (Executive) Offices: the total mold spore count in this area has dropped from 830 spores/m3 in our August 2019 test to 390 spores/m3 in our January 2020 test. Positive direction.

C. 5th Floor Offices: the mold spore count in this office is 1,440 spores/m3, which is considerably higher than the other office areas, and even the cafeteria area across hallway (590 spores/m3). But this is a considerable and significant drop (down 35%) from the test done before Christmas in December when the total spores count was 2,230 spores/m3. This area was not tested in August 2019.

Recommendations:

1. The 5th floor office spore count is coming down but is still higher than other offices. Consider treatment of the air conditioner unit serving that office by fogging Concrobium Mold Control through the system. Typical cleaning methods may not kill mold in the ducting. Consider a monthly inspection and spot treatment for any mold that become visible. Consider using a commercial grade air scrubber / purifier to continue with True HEPA Filter to continue to remove ambient airborne mold spores.

2. Consider periodic inspection and spot treatments of the other office area to reduce mold spore counts. Common area mold spore count remains high. Spot treatments of visible mold may help reduce the airborne mold from these areas permeating into more controlled office areas.



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Indoor Mold Testing & Laboratory Analysis

Typical Outdoor Mold Spore Concentrations, typically always much higher than indoors		
Local Description	**Spore Counts (ct/m3)**	**Predominant Types**
Urban & coastal strip	200 - 10,000	Cladosporium, asco/basidospores, Alternaria, Penicillium, Aspergillus
Inland valley & native vegetation	***500 - 20,000***	***Cladosporium, asco/basidiospores, Penicillium, Aspergillus***
Farms & heavy forestation	5,000 - 50,000	Cladosporium,asco/basidiospores, Alternaria, Penicillium, Aspergillus

Outdoor assemblages of mold spores are most commonly populated with over 90% of the following spores (listed in approximate order of descending abundance):
- Cladosporium
- Mushroom-like fungi (Ascospores and Basidiospores)
- Alternaria
- Rusts and Smuts (colonizing primary flower and leaf parts)

Typical Indoor Mold Spore Concentration Ranges		
"Clean" building	***<2,000 Total for all spore types <700 Penicillium, Aspergillus***	
Possible Indoor Amplification	1,000 - 5,000	Penicillium, Aspergillus, Cladosporium
Indoor Amplification likely present	5,000 - 10,000	Penicillium, Aspergillus, Cladosporium
Chronic Indoor Amplification	10,000 - 500,000	Penicillium, Aspergillus, Cladosporium

The most common molds susceptible to indoor amplification (over 90% of the typical mold growth) (listed in approximate order of descending abundance)
- Penicillium
- Aspergillus (flavus, fumigatus, terrus, versicolor, niger)
- Cladosporium
- Stachybotrys
- Alternaria, Chaetomium
- Zygomycetes (Mucor & Rhizopus)
- Ulocladum, Trichoderma
- Basidiomycete fungi

Aspergillus, acremonium and stachybotrys are the most dangerous and need immediate removal.

AEMTEK, INC.

Laboratory Analysis Report

Aemtek No. 2001163

466 Kato Terrace
Fremont, CA 94539
Phone: (510) 979-1979 Fax: (510) 668-1980
www.aemtek.com labreports@aemtek.com

Submitted to: **Industrial Solutions & Supply Corp**
21A PH Marquis, Eusebioa A Morales, El Cangrejo
Panama City, Panama
Attn: **Gary Moore**

Purpose: The purpose of this report is to present laboratory results obtained by analyzing the samples submitted to Aemtek, Inc. The report includes this cover and the data sheet(s).
Limitation: The test results presented in this report are only related to the samples supplied by the client and analyzed by Aemtek. This report shall not be reproduced, except in full, without written authorization of Aemtek. Aemtek shall have no liability to anyone with respect to any interpretations or uses of the laboratory report, decisions made or actions taken as a result of or based on the data reported. In no event shall Aemtek's liability with respect to the reported test results exceed the amount paid for the project by the client to Aemtek.
Sample Information: Sample identification, location, volume, weight, and area are from the client's Chain of custody. Unless specifically noted, the samples were received in acceptable condition.
Significant Figures: Because of the nature of the biological samples and analytical methods, the number of significant figures should generally be one of two, although the actual calculation results are reported.
Sample Custody: Samples accepted by Aemtek shall remain the property of client while in the custody of Aemtek. Aemtek shall retain preparation of samples for 7 days following the date of issuing this report. After the retention period, the samples shall be sterilized and discarded, unless otherwise requested by the client.
Confidentiality: Aemtek shall not provide analytical results or client's project information to any party other than the client, unless requested by the client, in writing, or by law.
About Aemtek: Aemtek, Inc. is an environmental microbiology laboratory providing reliable, fast, and expert laboratory services for the detection, identification, and analysis of microorganisms. We are committed to excellence in quality, service, and technology. All analysts are experienced Ph.D. specialists. The laboratory is accredited by the American Industrial Hygiene Association (AIHA) in the Environmental Microbiology liability with respect to the reported test results exceed the Laboratory Accreditation Program (EMLAP Lab #167620).

Project ID: [redacted]

Location: [redacted]

Sampling Date: **01-02-2020**

Sample Received: **01-06-2020**

Data Reported: **01-08-2020**

Approved By:

Dr. Florence Wu
Principal Mycologist

Dr. Steven Huang
Laboratory Director

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Lab ID # 167620

Laboratory Analysis Report

Data Sheet

Aemtek No. 2001163

AEMTEK, INC.
466 Kato Terrace
Fremont, CA 94539
Phone: 510-979-1979
Fax: 510-668-1980

Project ID: [redacted]oja
Project Location: [redacted]ity, Panama
Analysis Performed: Fungal Direct Examination (FDE)
Sample Type: Air

Submitted to:
Industrial Solutions & Supply Corp
Panama City,
Panama

Sample ID	#1- PB			#2- 5FL.O			#3- 5FL.C			#4- 4FL.O			#5- 4FL.CA		
Location	Main Floor Reception Area			5th Floor Office Area			5th Floor Office Cafeteria Area			4th Floor Executive & International Offices			4th Floor Common Area by Stairwell		
Air Volume (L)	150			150			150			150			150		
Fungal Identification	Count	Spores/m³	%	Count	Spores/m³	%	Count	Spores/m³	%	Count	Spores/m³	%	Count	Spores/m³	%
Alternaria	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ascospores	1	7	1	1	7	-	1	7	1	1	7	2	7	49	2
Aspergillus/Penicillium-like	49	343	36	125	875	61	43	301	51	27	189	48	109	763	25
Basidiospores	30	210	22	31	217	15	22	154	26	14	98	25	167	1169	39
Bipolaris/Dreschlera	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Botrytis	-	-	-	-	-	-	-	-	-	-	-	-	2	14	-
Cercospora	-	-	-	-	-	-	-	-	-	-	-	-	2	14	-
Chaetomium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cladosporium	8	56	6	3	21	1	4	28	5	3	21	5	55	385	13
Curvularia	-	-	-	-	-	-	-	-	-	-	-	-	2	14	-
Epicoccum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ganoderma	2	14	1	-	-	-	-	-	-	1	7	2	5	35	1
Myxomycetes/*Periconia*/Rust/Smut	1	7	1	1	7	-	-	-	-	-	-	-	5	35	1
Nigrospora	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oidium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Petriella	-	-	-	-	-	-	-	-	-	1	7	2	-	-	-
Pithomyces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stachybotrys	1	7	1	-	-	-	-	-	-	-	-	-	-	-	-
Stemphylium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-	-	-	-	-	1	7	-
Trichoderma-like	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other hyaline spores	43	301	31	45	315	22	14	98	17	9	63	16	73	511	17
Other colored spores	1	7	1	-	-	-	-	-	-	-	-	-	-	-	-
Hyphal fragments	1	7	1	-	-	-	-	-	-	-	-	-	3	21	1
Total	137	959	100	206	1442	100	84	588	100	56	392	100	431	3017	100
Pollen/m³	-			-			7			-			7		
Insect or dust mite parts/m³	-			-			-			7			7		
Detection Limit (spores/m³)	7			7			7			7			7		
General Density	1-25%			1-25%			1-25%			1-25%			26-50%		
% of Trace Analyzed	100%			100%			100%			100%			100%		

Method ID: Aemtek SOP AF101
Sampling Date: 01-02-2020
Analysis Performed By: Thomas Giang
Date of Analysis: 01-06-2020

Direct microsopy detection limit: One spore or one hyphal Fragment per sample.

Reviewed By: Brook Li

AEMTEK, INC.
466 Kato Terrace
Fremont, CA 94539
Phone: 510-979-1979
Fax: 510-668-1980

Laboratory Analysis Report

Data Sheet

Aemtek No. 2001163

Project ID: [redacted]
Project Location: Edif 221, Ciudad del Saber, Panama City, Panama
Analysis Performed: Fungal Direct Examination (FDE)
Sample Type: Air

Submitted to:
Industrial Solutions & Supply Corp
Panama City,
Panama

Sample ID	#6- 4FL.N														
Location	4th Floor Noew Offices Main Meeting Room at Entry														
Air Volume (L)	150														
Fungal Identification	Count	Spores/m³	%	Count	Spores/m³	%	Count	Spores/m³	%	Count	Spores/m³	%	Count	Spores/m³	%
Alternaria	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium-like	79	553	80	-	-	-	-	-	-	-	-	-	-	-	-
Basidiospores	6	42	6	-	-	-	-	-	-	-	-	-	-	-	-
Bipolaris/Dreschlera	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Botrytis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cercospora	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cladosporium	3	21	3	-	-	-	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Myxomycetes/*Periconia*/Rust/Smut	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oidium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Petriella	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pithomyces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stachybotrys	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stemphylium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Torula	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichoderma-like	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ulocladium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other hyaline spores	9	63	9	-	-	-	-	-	-	-	-	-	-	-	-
Other colored spores	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hyphal fragments	2	14	2	-	-	-	-	-	-	-	-	-	-	-	-
Total	99	693	100	-	-	-	-	-	-	-	-	-	-	-	-
Pollen/m³	-			-			-			-			-		
Insect or dust mite parts/m³	-			-			-			-			-		
Detection Limit (spores/m³)	7			-			-			-			-		
General Density	1-25%			-			-			-			-		
% of Trace Analyzed	100%			-			-			-			-		

Method ID: Aemtek SOP AF101
Sampling Date: 01-02-2020
Analysis Performed By: Thomas Giang
Date of Analysis: 01-06-2020

Direct microsopy detection limit: One spore or one hyphal Fragment per sample.

Reviewed By: Brook Li

Sample Type Codes	
A - Air	B - Bulk
C - Culture	D - Dust
S - Swab	T - Tape
W - Water	Other:

Analysis Codes

FDE - Fungi Direct Exam: identifying fungi to genus or spore type. Rush services available.

FCG - Fungi Culturable, identified to Genus only.

FCS - Fungi Culturable, common Species identification without subculturing.

EBC - Environmental Bacteria Count and group/genus ID

SSC - Sewage Screen for total coliforms, *E. coli*, and enterococci. Please specify qualitative or quantitative.

Legionella

LG-C - *Legionella* Culturable

LegiJort - *L.pneumophila* Detection

LG-QPCR - *L.pneumophila* screen

Fungal QPCR Panels:

Health Care 46 - 46 species

Indoor Mold Panel - 22 species

Pathogenic *Aspergillus* spp.

Turn Around Time

STD - standard/default, 7 days for culturable, 2-5 days for bacterial analysis.

Rush - not available for culturables

WH - Weekend or holiday service. Prior notice required.

FDE Only TAT Options

STD - 2 days	**3H** - 3 hours
SD - Same Day	**1D** - 1 day

Mold Control Panama

A division of Industrial Solutions & Supply Corp.

CHAIN OF CUSTODY

Industrial Hygiene Testing

Aemtek No.: 2001163

Email: labreports@aemtek.com 466 Kato Terrace, Fremont, CA 94539 Phone: 510-979-1979 Fax: 510-668-1980

Contact Information

Company: Industrial Solutions & Supply Corp. Contact: Gary Moore

Address: 21A PH Marquis, Ave Eusebioa A Morales, El Cangrejo, Panama City, Panama

Phone: 786-352-8783 E-mail: gary007moore@gmail.com

Email for reporting: Gary@moldcontrolpanama.com

Project Information

Proje

Site:

Panama City, Panama

Sampled by: Moore Sampling Date:Jan. 2, 2020

Sample ID	Sampling Location	Weight (g), Volume (L) or Area (sq. in.)	Analysis Requested	Sample Type	Turn Around Time	Notes / List of Target PCR Species (If applicable)
			Please use the codes on the right or specify			
#1 - PB	Main Floor reception area		FDE	A	STD	
#2 - 5FL.O	5th floor office area		FDE	A	STD	
#3 - 5FL.C	5th floor office cafeteria area		FDE	A	STD	
#4 - 4FL.O	4th floor executive and international offices		FDE	A	STD	
#5 - 4FL.CA	4th floor common area, by stairwell		FDE	A	STD	
#6 - 4FL.N	4th floor, noew offices, main meeting room at entry		FDE	A	STD	

Relinquished by	Date & Time	Notes:	Received by AEMTEK: Date & Time
sign [signature]	date Jan 02 · 2020	Air samples taken with Air-O-Cell cartridges using Zefon BioPum Plus, 10 min @ 15 l/min	[signature] 1/6/2020 9:35
print GARY MOORE	time		

Call 510-979-1979 or email lab@aemtek.com with your specific analytical needs and concerns. To ensure analytical integrity, we reserve the right to reject inappropriately prepared/shipped samples. All analytical services subject to our standard terms and conditions. **Swab, culture plates and water samples should be shipped overnight and cold.** If no turn around time indicated, standard report time applies. Samples received after 5:00 pm on business days or in the weekend will be logged in the next business day. For "same day" service, samples must be received before 10 am; for "same day", 12:00 pm; for "3 hours". Our business hours are 8:00 am - 5:00 pm, PST, Monday - Friday. Contact the lab to arrange weekend or holiday analysis. For sampling and shipping information, please visit www.aemtek.com.