Treadway, David

From: Treadway, David
Sent: Wednesday, July 10, 2019 1:52 PM
To: Gilbreath, Justin
Cc: Baxter, Tim; Wiley, Richard; Rangel, Rudolph; Barr, Shawn; Cashman, Susan; Darren Bowden; Hughes, Jason; Mutschler, Carolyn
Subject: RE: IAQ - Air Test Results - The Colony HS -Field House Weight Room

Mr. Gilbreath,

Good afternoon. My name is David Treadway and I am the new IAQ coordinator. I am sending this email to follow up with the results of the retest of the Field House Weight Room. On 7/1/19, Ensolum LLC retested the Field House Weight Room. It is typically assumed that the indoor spore levels in an area with filtered or air conditioned air, and activity levels associated with schools average below the outdoor levels. Data from the airborne fungi sampling indicated that the total indoor concentration of mold/fungi in the Field House Weight Room, was **5.51%** of the outdoor levels. Utilizing this theory, the indoor concentrations were within the acceptable guidelines for areas with filtered air or air conditioning. The Aspergillus/Penicillium levels are significantly lower since the original air sampling. If you have any questions, please call or email me.

Thanks,

David

David Treadway
Environmental Coordinator
Lewisville ISD
469-948-7823

From: Siddall, Paul <siddallp@lisd.net>
Sent: Tuesday, May 14, 2019 7:36 AM
To: Gilbreath, Justin <GilbreathP@lisd.net>
Cc: Baxter, Tim <baxtert@lisd.net>; Wiley, Richard <WILEYR@lisd.net>; Rangel, Rudolph <rangelr@lisd.net>; Barr, Shawn <BARRS@lisd.net>; Cashman, Susan <CashmanS@lisd.net>; Darren Bowden <dbowden@ensolum.com>; Hughes, Jason <hughesjk@lisd.net>; Mutschler, Carolyn <mutschlerc@lisd.net>; Treadway, David <TREADWAYD@lisd.net>
Subject: IAQ - Air Test Results - The Colony HS -Field House Weight Room

Justin...

On Wednesday 5/1, Ensolum LLC Air tested the Field House Weight Room. It is typically assumed that indoor spore levels in an area with filtered or air conditioned air, and activity levels associated with schools average below the outdoor levels. Data from the airborne fungi sampling indicated that the total indoor concentration of mold/fungi in the Field House Weight Room, was **152.3%** of the outdoor levels. Utilizing this theory, the indoor concentrations were above the acceptable guidelines for areas with filtered air or air conditioning. **The Aspergillus/Penicillium was exceptionally high. The East Zone Facility Services will put the Air Scrubber Machine and 2 Dehumidifiers in the Weight Room today, for a week. We will retest the Weight Room in the middle of June.** If you have any questions, please call me.
Thanks,
Paul

Paul Siddall

Maintenance Energy Auditor (IAQ)

Facility Services

Lewisville ISD

340 Lake Haven Rd

Lewisville, TX 75057

ENSOLUM

July 10, 2019

Lewisville Independent School District
340 Lake Haven
Lewisville, Texas 75057
Attn: Mr. David Treadway

Re:

Limited Mold Assessment RETEST
The Colony High School – Weight Room
4301 Blair Oaks Dr.
The Colony, Texas
Ensolum Project No. 01A.1288.022A

Ensolum, LLC (Ensolum) was retained to perform limited mold assessment services within Room 112 (Weight Room) of The Colony High School located at 4301 Blair Oaks Drive in The Colony, Texas. Enclosed is the report, including analytical data.

Ensolum appreciates this opportunity to be of service and looks forward to our continued work together. Please contact the undersigned with any questions or concerns you may have.

Sincerely,

Tod L. McLellan, MAC
Mold Assessment License: MAC1361
Exp. Date: 03/08/2020

Darren G. Bowden
Principal
MAC0321 EXP: 2/15/2020

1.0 INTRODUCTION

Ensolum was retained by Mr. David Treadway, LISD, to complete a Limited Mold Assessment of Room 112 (Weight Room) within The Colony High School addressed at 4301 Blair Oaks Drive, The Colony, Texas. The purpose of this investigation was to determine if elevated concentrations of airborne fungal spores and structures were present within the above-referenced area.

Mr. Tod McLellan completed the on-site investigation on July 1, 2019. The Limited Mold Assessment was performed in response to a complaint of possible indoor air quality issues within the Weight Room.

2.0 PROCEDURE

Ensolum visually inspected accessible areas of the office. No visible water damage or odors were observed in the following locations:

VISIBLE WATER DAMAGE		
LOCATION	DATE	EXPLAINATION
Room 112 (Weight Room)	07-01-2019	N/A

It is possible that water-damaged building materials are present within the adjacent areas but were not reasonably accessible due to access limitations.

Following the inspection of potential water-damaged building materials, Ensolum conducted a moisture investigation in the identified areas to determine if nonvisible water-damaged materials and other building materials within the investigation area were present. The moisture investigation was completed with a GE Protimeter BLD5364 moisture meter on accessible porous and semi-porous building materials in each area of concern. At the time of investigation, monitored building materials did not exhibit elevated moisture concentrations in comparison with similar and non-affected building materials in the structure and standard scientific guidelines.

Representative Relative Humidity readings were collected and recorded using a Vaisala HM40 Humidity and Temperature Meter. Measurements recorded during the investigation are listed in the chart below:

TEMPERATURE, RELATIVE HUMIDITY & SPECIFIC HUMIDITY				
LOCATION	DATE	Temperature: F	Relative Humidity	Specific Humidity
Room 112 (Weight Room)	07-01-2019	78.2°	41.9%	60.22
Outdoor	07-01-2019	93.7°	38.1%	90.63
Outdoor	07-01-2019	97.0°	36.1%	95.12

Area air samples were collected with Allergenco-D spore trap cassettes and analyzed for airborne fungal spores and structures. Samples were collected at a rate of 15 liters per minute. Indoor air sample(s) were collected for a five (5) minute period of time (75 liters) at a height of approximately five (5) feet above finished floor (AFF). Outdoor air samples were collected for a five (5) minute period of time (75 liters) at a height of approximately five (5) feet above level ground. American Conference of Governmental Industrial Hygienists (ACGIH) guidelines were followed for the sample collection. Fungal air samples were collected in the following areas:

SPORE TRAP LOCATIONS	
SAMPLE NUMBER	LOCATION
275826 (ST – 1)	Room 112 (Weight Room)
275833 (ST – 2)	Outdoor
275838 (ST – 3)	Outdoor

3.0 RESULTS

Currently, there are no regulatory standards for airborne fungal contamination. Therefore, results of the fungal analysis are compared against scientific guidelines. Bioaerosol samples are evaluated by comparing the indoor samples against the outdoor sample. The same types of fungi should be found in both the indoor and outdoor samples. Should higher fungal concentrations occur in the indoor sample(s) or complaint areas, this generally indicates there is a source of fungal growth in the area. The types of fungi are also evaluated-the same types/genus of fungi should be present in both the indoor/complaint and outdoor/non-complaint samples.

The results of the fungal air samples collected were evaluated. Air testing performed using spore traps found that airborne mold spores in the room were considerably lower and were qualitatively similar to those measured outside of the building at the time the sampling was performed.

4.0 CONCLUSIONS

Based on ENSOLUM's limited assessment and the analytical results, it appears that the indoor air quality, as it relates to airborne fungi, was within recommended guidelines on this day. Normal cleaning and upkeep should be regularly maintained to ensure that indoor air quality remains within recommended guidelines.

APPENDIX A

ANALYTICAL DATA

IAQ Mold Report

Summary

Moody Labs
2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460

TDLR License No.: LAB0117
AIHA EMPAT ID: 102577

Client : Ensolum, LLC
Project : LISD - The Colony HS
Project # : 01A1288022
Sample Type: Spore Trap, Non-cultured
Test Method: Mold: ASTM D7391-17e1 - Standard Profile

Lab Job No. : 19F-08099
Report Date : 07/03/2019 1:07 PM
Sample Date: 07/01/2019
Spore Trap Type: Allergenco D

On 7/1/2019, three (3) samples were submitted by Tod McLellan of Ensolum, LLC (located at 2351 W. Northwest Hwy Suite #1203, Dallas, TX 75220) for Spore Trap, Non-cultured mold analysis. This report consists of three sections; a summary section, a data detail section, and an analytical notes section.

Sample Number	Volume (liters)	Sample Description	Identification	Concentration spores/cubic meter	
275826	75	Weight Room	Basidiospores	493	63%
			Cladosporium	147	19%
			Aspergillus / Penicillium	93	12%
			Myxomycete / Rust / Smut	27	3%
			Cercospora / Pseudocercospora	13	2%
			Ascospores	13	2%
			Total:	786	100%
275833	75	Outdoor * See Analytical Notes report for further details	Basidiospores	10400	73%
			Cladosporium	1631	11%
			Ascospores	906	6%
			Cercospora / Pseudocercospora	413	3%
			Coprinus group	213	1%
			Myxomycete / Rust / Smut	147	1%
			Alternaria	147	1%
			Fusarium	80	<1%
			Drechslera / Bipolaris group	53	<1%
			Aspergillus / Penicillium	53	<1%
			Agaricales group	53	<1%
			Fusicladium	40	<1%
			Torula	40	<1%
			Ganoderma	27	<1%
			Hyphal / Spore Fragments - Dematiaceous	13	<1%
			Curvularia	13	<1%
			Pyricularia	13	<1%
			Total:	14242	100%

IAQ Mold Report

Summary

Moody Labs
2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460

TDLR License No.: LAB0117
AIHA EMPAT ID: 102577

Client : Ensolum, LLC
Project : LISD - The Colony HS
Project # : 01A1288022
Sample Type: Spore Trap, Non-cultured
Test Method: Mold: ASTM D7391-17e1 - Standard Profile

Lab Job No. : 19F-08099
Report Date : 07/03/2019 1:07 PM
Sample Date: 07/01/2019
Spore Trap Type: Allergenco D

On 7/1/2019, three (3) samples were submitted by Tod McLellan of Ensolum, LLC (located at 2351 W. Northwest Hwy Suite #1203, Dallas, TX 75220) for Spore Trap, Non-cultured mold analysis. This report consists of three sections; a summary section, a data detail section, and an analytical notes section.

Sample Number	Volume (liters)	Sample Description	Identification	Concentration spores/cubic meter	
275838	75	Outdoor * See Analytical Notes report for further details	Basidiospores	10900	77%
			Ascospores	1253	9%
			Cladosporium	986	7%
			Cercospora / Pseudocercospora	227	2%
			Coprinus group	200	1%
			Myxomycete / Rust / Smut	187	1%
			Alternaria	93	<1%
			Aspergillus / Penicillium	67	<1%
			Fusicladium	40	<1%
			Agaricales group	40	<1%
			Drechslera / Bipolaris group	27	<1%
			Pithomyces	27	<1%
			Pyricularia	27	<1%
			Fusarium	27	<1%
			Epicoccum	13	<1%
			Curvularia	13	<1%
			Helicomyces	13	<1%
			Oidium	13	<1%
			Peronospora	13	<1%
			Total:	14166	100%

Analyst(s): Kyle Thiele

Lab Director : Heather Lopez

Approved Signatory : Heather Lopez

Lab Director : Bruce Crabb

Approved Signatory : Bruce Crabb

Thank you for choosing Moody Labs

IAQ Mold Report

Data Detail

Moody Labs
2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460
TDLR License No.: LAB0117
AIHA EMPAT ID: 102577

Client : Ensolum, LLC
Project : LISD - The Colony HS
Project # : 01A1288022
Sample Type: Spore Trap, Non-cultured
Test Method: Mold: ASTM D7391-17e1 - Standard Profile

Lab Job No. : 19F-08099
Report Date : 07/03/2019 1:07 PM
Sample Date: 07/01/2019
Spore Trap Type: Allergenco D

This report consists of three sections; a summary section, a data detail section, and an analytical notes section. Results may not be reported except in full.

Sample ID:	275826					275833					275838				
Location:	Weight Room					Outdoor					Outdoor				
Media Expires On:	Apr 2020					Apr 2020					Apr 2020				
Notes Included:						See Analytical Notes					See Analytical Notes				
Volume:	75					75					75				
	raw ct.	RL	spores/m³	%total	spores/m³ SF	raw ct.	RL	spores/m³	%total	spores/m³ SF	raw ct.	RL	spores/m³	%total	spores/m³ SF
Agaricales group						4	13	53	<1%	50	3	13	40	<1%	40
Alternaria						11	13	147	1%	150	7	13	93	<1%	90
Ascospores	1	13	13	2%	10	68	13	906	6%	910	94	13	1253	9%	1300
Aspergillus / Penicillium	7	13	93	12%	90	4	13	53	<1%	50	5	13	67	<1%	70
Basidiospores	37	13	493	63%	490	104	100	10400	73%	10000	109	100	10900	77%	11000
Cercospora / Pseudocercospora	1	13	13	2%	10	31	13	413	3%	410	17	13	227	2%	230
Chaetomium															
Cladosporium	11	13	147	19%	150	106	15	1631	11%	1600	74	13	986	7%	990
Coprinus group						16	13	213	1%	210	15	13	200	1%	200
Curvularia						1	13	13	<1%	10	1	13	13	<1%	10
Drechslera / Bipolaris group						4	13	53	<1%	50	2	13	27	<1%	30
Epicoccum											1	13	13	<1%	10
Fusarium						6	13	80	<1%	80	2	13	27	<1%	30
Fusicladium						3	13	40	<1%	40	3	13	40	<1%	40
Ganoderma						2	13	27	<1%	30					
Helicomyces											1	13	13	<1%	10
Hyphal / Spore Fragments - Dematiace						1	13	13	<1%	10					
Hyphal / Spore Fragments - Hyaline															
Memnoniella															
Myxomycete / Rust / Smut	2	13	27	3%	30	11	13	147	1%	150	14	13	187	1%	190
Oidium											1	13	13	<1%	10
Peronospora											1	13	13	<1%	10
Pithomyces											2	13	27	<1%	30
Pyricularia						1	13	13	<1%	10	2	13	27	<1%	30
Stachybotrys															
Torula						3	13	40	<1%	40					
TOTALS	59		786	100%	790	376		14242	100%	14000	354		14166	100%	14000
Analyst	Kyle Thiele					Kyle Thiele					Kyle Thiele				
Analysis Date	7/2/2019					7/2/2019					7/2/2019				
Debris Rating	2					5					5				
Debris Composition															
Fibers	1/5					1/5					1/5				
Inorganic/Other	2/5					5/5					5/5				
Insect Parts	0/5					0/5					1/5				
Pollen	0/5					1/5					1/5				
Skin/Dander	1/5					1/5					1/5				

IAQ Mold Report

Data Detail

Moody Labs
2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460

TDLR License No.: LAB0117
AIHA EMPAT ID: 102577

Client : Ensolum, LLC
Project : LISD - The Colony HS
Project # : 01A1288022
Sample Type: Spore Trap, Non-cultured
Test Method: Mold: ASTM D7391-17e1 - Standard Profile

Lab Job No. : 19F-08099
Report Date : 07/03/2019 1:07 PM
Sample Date: 07/01/2019
Spore Trap Type: Allergenco D

This report consists of three sections; a summary section, a data detail section, and an analytical notes section. Results may not be reported except in full.

End of Data Detail section
19F-08099

IAQ Mold Report

Analytical Notes

Moody Labs
2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460
TDLR License No.: LAB0117
AIHA EMPAT ID: 102577

Client : Ensolum, LLC
Project : LISD - The Colony HS
Project # : 01A1288022
Sample Type: Spore Trap, Non-cultured
Test Method: Mold: ASTM D7391-17e1 - Standard Profile

Lab Job No. : 19F-08099
Report Date : 07/03/2019 1:07 PM
Sample Date : 07/01/2019
Spore Trap Type: Allergenco D

This report consists of three sections; a summary section, a data detail section, and an analytical notes section. Results may not be reported except in full.

Samples Analyzed

Sample No	275833 : Outdoor
Notes:	40% Occluded. Please note: the minimum detection limit for Basidiospores is 100 spores / cubic meter. When comparing results to other samples, use calculated results, not raw numbers. Please note: the minimum detection limit for Cladosporium is 15 spores / cubic meter. When comparing results to other samples, use calculated results, not raw numbers.
Sample No	275838 : Outdoor
Notes:	30% Occluded. Please note: the minimum detection limit for Basidiospores is 100 spores / cubic meter. When comparing results to other samples, use calculated results, not raw numbers.

Field Blanks

No discernable field blanks were submitted with this set of samples.

NOTE: All remaining samples suitable for analysis.

IAQ Mold Report

Analytical Notes

Moody Labs
2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460
TDLR License No.: LAB0117
AIHA EMPAT ID: 102577

Client : Ensolum, LLC
Project : LISD - The Colony HS
Project # : 01A1288022
Sample Type: Spore Trap, Non-cultured
Test Method: Mold: ASTM D7391-17e1 - Standard Profile

Lab Job No. : 19F-08099
Report Date : 07/03/2019 1:07 PM
Sample Date : 07/01/2019
Spore Trap Type: Allergenco D

This report consists of three sections; a summary section, a data detail section, and an analytical notes section. Results may not be reported except in full.

Methods

Method: ASTM D7391-17e1: Categorization and Quantification of Airborne Fungal Structures in an Inertial Impaction Sample by Optical Microscopy.
Samples are read at 100% unless noted. Partial readings may be employed when concentrations are elevated. Use final spore concentrations, not raw spore counts, for interpretation of results.

Calculation: Spores/cubic meter = (Raw spore count)*(RL)
Note: RL (Reporting Limit) is based upon 1 raw spore count.
Moody Labs recommends two significant figures for calculated values based on ASTM D7391-17e1.

This report must not be used by the customer to claim product certification, approval, or endorsement by AIHA, ISO, or any agency of the Federal Government.

Debris Rating Key

0 - No linear trace detected
1 - Trace particulate/debris
2 - Light particulate/debris
3 - Moderate particulate/debris.
4 - Substantial particulate/debris
5 - Extensive particulate/debris
6 - Field blank
10 - Hold Sample
11 - Modified Analysis per Client Instructions

NOTE: Particulate/debris are defined as skin, fibers, pollen grains, insect parts, fungal and/or other non-fungal particles.

IAQ Mold Report

Analytical Notes

Moody Labs
2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460
TDLR License No.: LAB0117
AIHA EMPAT ID: 102577

Client : Ensolum, LLC
Project : LISD - The Colony HS
Project # : 01A1288022
Sample Type: Spore Trap, Non-cultured
Test Method: Mold: ASTM D7391-17e1 - Standard Profile

Lab Job No. : 19F-08099
Report Date : 07/03/2019 1:07 PM
Sample Date : 07/01/2019
Spore Trap Type: Allergenco D

This report consists of three sections; a summary section, a data detail section, and an analytical notes section. Results may not be reported except in full.

Accredited Laboratory
AIHA LAP, LLC
Lab ID # 102577

HUB
Statewide Historically Underutilized Business Program

tdlr

Certified
SBA WOSB
Woman Owned Small Business

Certified WBENC Women's Business Enterprise

TEXAS DEPARTMENT OF TRANSPORTATION
Small Business Enterprise Program

certified WBENC
WOMEN'S BUSINESS ENTERPRISE

End of Analytical Notes section
19F-08099

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IAQ Mold Report

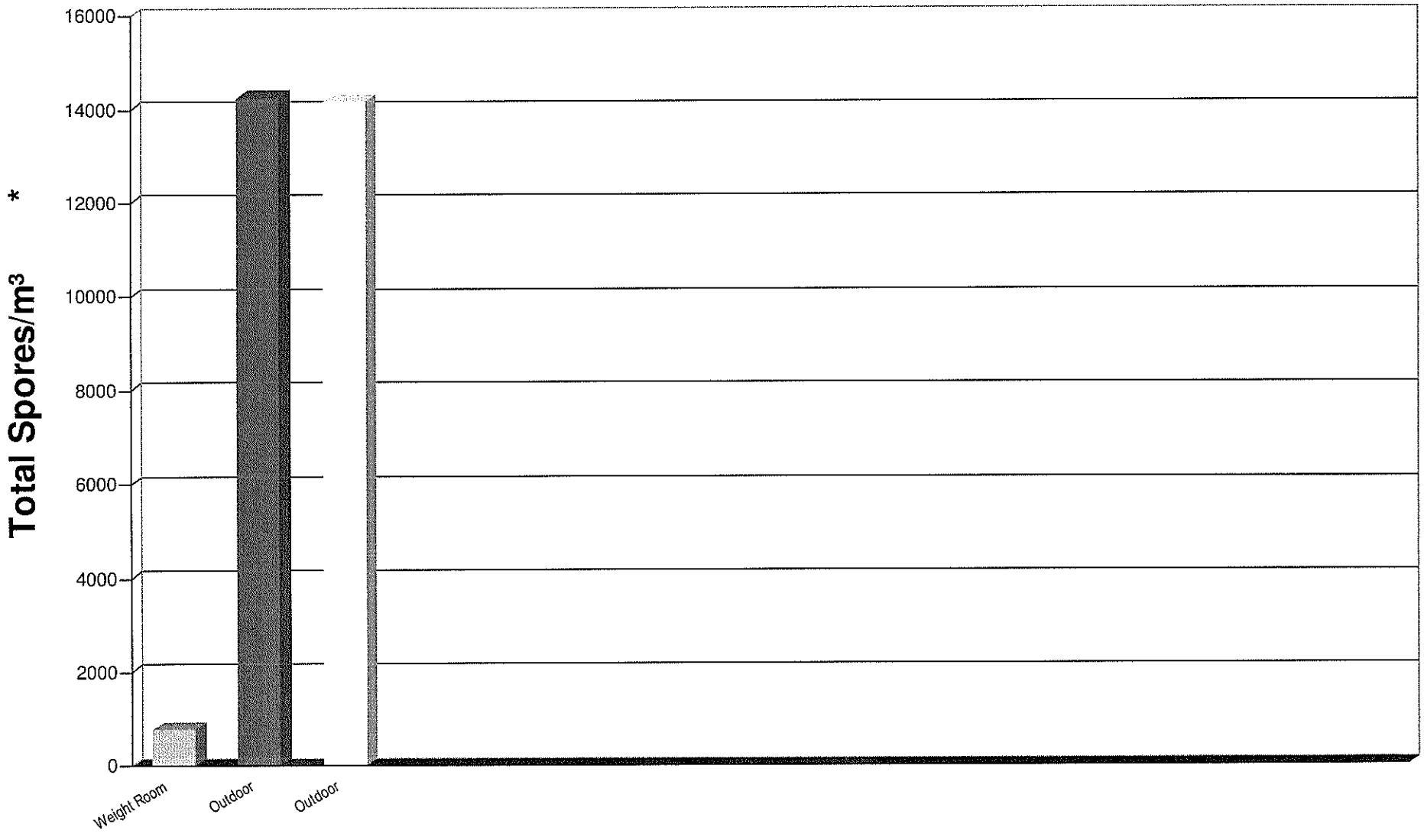
Supplemental Overview

Moody Labs
2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460

TDLR License No.: LAB0117
AIHA EMPAT ID: 102577

Client : Ensolum, LLC
Project : LISD - The Colony HS
Project # : 01A1288022

Lab Job No. 19F-08099
Report Date 07/03/2019 1:07 PM
Sample Date : 07/01/2019



IAQ Mold Report

Supplemental Overview

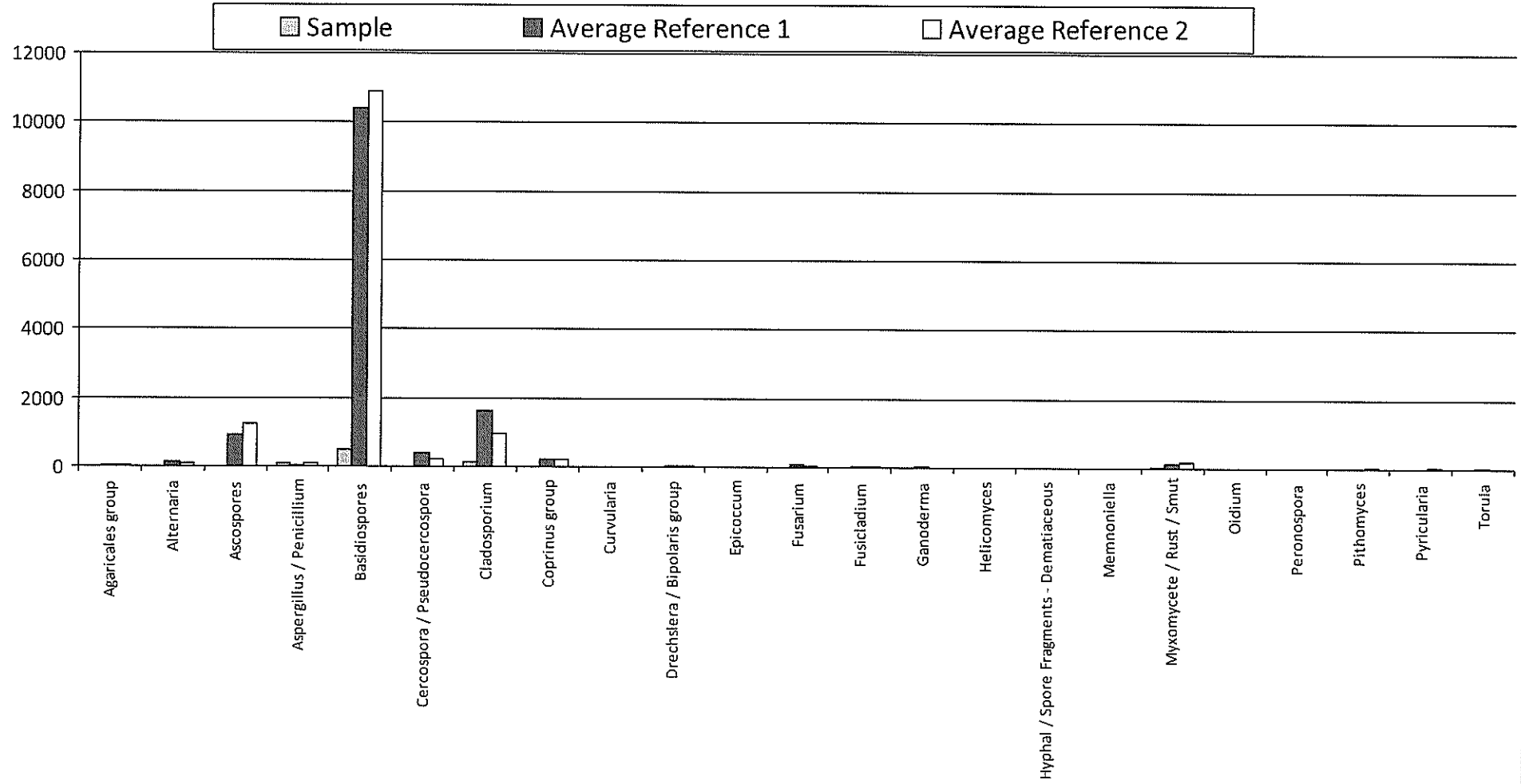
Moody Labs
2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460

TDLR License No.: LAB0117
AIHA EMPAT ID: 102577

Client : Ensolum, LLC
Project : LISD - The Colony HS
Project # : 01A1288022

Weight Room

Lab Job No. 19F-08099
Report Date 07/03/2019 1:07 PM
Sample Date : 07/01/2019



Average Reference 1 = Outdoor

Average Reference 2 = Outdoor

Moody Labs
2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460

IAQ Mold Report

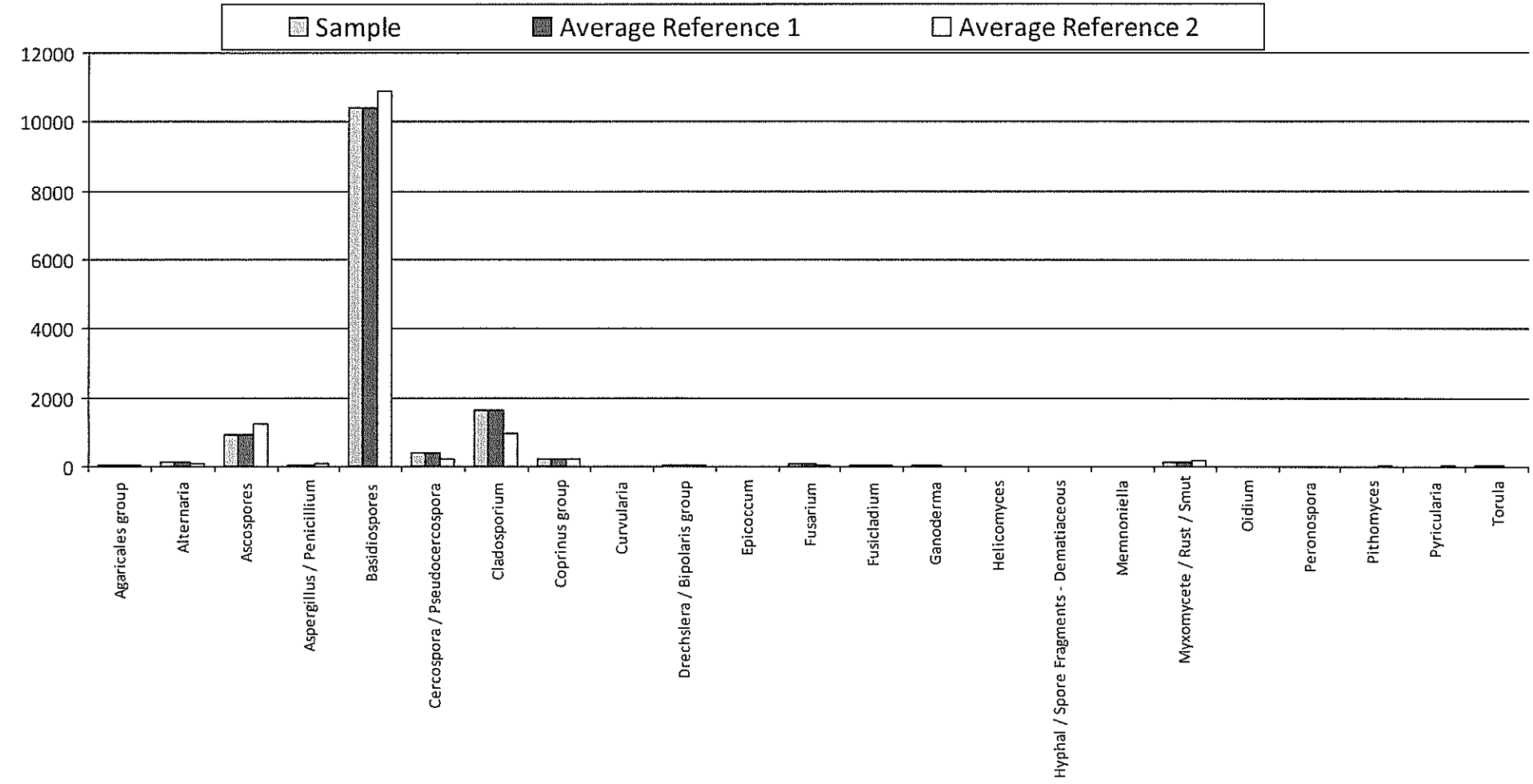
Supplemental Overview

TDLR License No.: LAB0117
AIHA EMPAT ID: 102577

Client : Ensolum, LLC
Project : LISD - The Colony HS
Project # : 01A1288022

Outdoor

Lab Job No. 19F-08099
Report Date 07/03/2019 1:07 PM
Sample Date : 07/01/2019



Average Reference 1 = Outdoor

Average Reference 2 = Outdoor

Moody Labs

IAQ Mold Report

Supplemental Overview

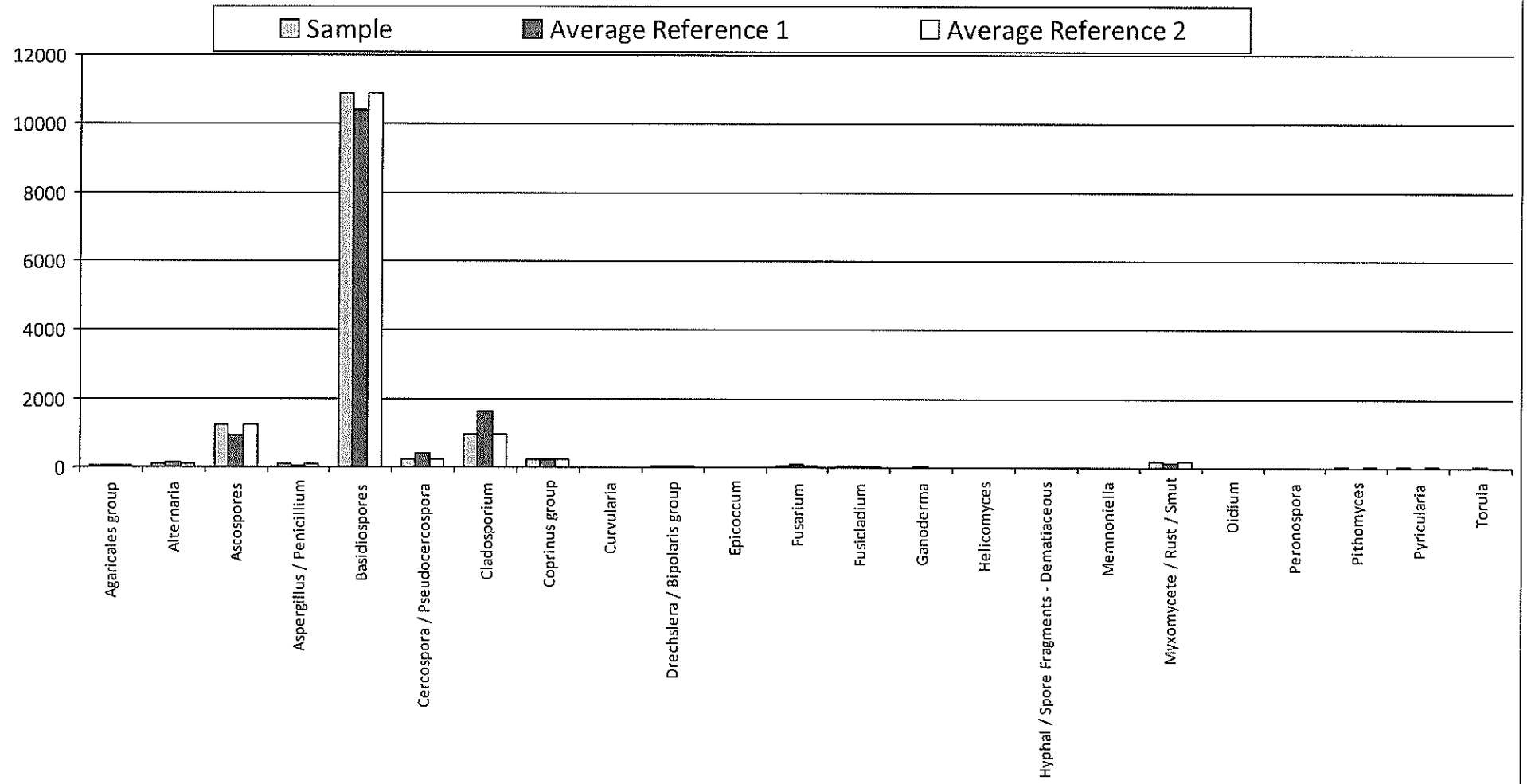
2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460

TDLR License No.: LAB0117
AIHA EMPAT ID: 102577

Client : Ensolum, LLC
Project : LISD - The Colony HS
Project # : 01A1288022

Outdoor

Lab Job No. 19F-08099
Report Date 07/03/2019 1:07 PM
Sample Date : 07/01/2019



Average Reference 1 = Outdoor

Average Reference 2 = Outdoor

End of Supplemental Overview section
19F-08099

Moody Labs

Chain of Custody

Lab Job # 19F08099 Allen 3
Lab Job # Std
Lab Job #

Please call in advance for immediate, after-hour, & weekend pricing & availability.

ASBESTOS PLM
Bulk ☐ Immediate ☐ 1 day ☐ 2 day ☐ 3 day ☐ 5 day ☐ **Analyze All** ☐ **Positive Stop**

PCM Air (7400)
☐ Immediate ☐ 1 day ☐ 2 day ☐ 3 day ☐ 5 day **Analyze Blanks** ☐ **Yes** ☐ **No**

TOTAL DUST(0500/0600)
☐ 1 day ☐ 2 day

ASBESTOS TEM
Air AHERA Method ☐ Late Night* ☐ 6 hr ☐ 12 hr ☐ 24 hr
Air 7402 (Modified) ☐ 1 day ☐ 2 day ☐ 3 day
Bulk ☐ 1 day ☐ 2 day ☐ 3 day ☐ 5 day
Water/Wipe/Micro Vac ☐ 1 day ☐ 2 day ☐ 3 day
Analyze Blanks ☐ **Yes** ☐ **No**
*Late night analysis surcharges apply

MOLD
Direct Exam ☐ Immed ☐ 1 day ☐ 2 day ☐ 5 day
Standard Air ☐ Immed ☐ 1 day ☒ 2 day ☐ 5 day
Expanded Air ☐ Immed ☐ 1 day ☐ 2 day ☐ 5 day
Culture** ☐ 10-14 days
Analyze Blanks ☐ **Yes** ☐ **No**
Turnaround of Culture Samples subject to Culture Growth

BACTERIA**
Colony Counts (CC) ☐ 3 day ☐ 5 day
CC + Gram Stain ☐ 3 day ☐ 5 day
Coliform & E. coli (P/A) ☐ 2-3 day
Legionella ☐ 14 days

OTHER:

Billing Company / City: Ensolum/Dallas
Submitter's Company: Ensolum, LLC.
Submitter's Name: Tod McLellan MAC1361
Project: LISD - The Colony HS
Contact Information: Name: Tod McLellan
E-mail Results to: Jcolson@ensolum.com & Tmclellan@ensolum.com
Invoice Address: 2351 W. Northwest Hwy. Suite 1203, Dallas, TX

# of Samples: 3
Sample Date: 07.01.19
Project #: 01A1288022
Phone #: 682-225-3050
Mobile #:
Fax #:
P.O. #:

Please review paperwork and samples before submitting to lab. Unsealed / improperly packaged / damaged / expired samples or excessive administrative requests may incur additional fees

Notes:

Sample #	Sample Description	Vol. / Area (if applicable)	Location / Notes
275824	Weight Room	75L	
275833	outdoor		
275838	outdoor		

Released By:	Date / Time:	Received By:	Date / Time:
	07.01 / 1441		7/1/19
Released By:	Date / Time:	Received By:	Date / Time:

APPENDIX B

DEFINITIONS AND LIMITATIONS

ENSOLUM

Mold Services Definitions & Limitations

Ensolum performed services in accordance with generally accepted practices of the profession undertaken in similar services at the same time and in the same geographical area. No other warranties, express or implied, apply to the services hereunder or the final report.

Ensolum's services and any report have been prepared on behalf of and for the exclusive use of the Client solely for its use and reliance in assessing the presence of mold in the Investigation Areas of the site. The Client was the only party to which Ensolum explained the risks and limitations of the services and was solely involved in shaping the scope of services. Accordingly, reliance on this report by any other party may involve assumptions leading to an unintended interpretation of findings and opinions. With the consent of the Client, Ensolum may offer reliance to third parties or contract with other parties to develop findings and opinions related to such party's unique risk management concerns. Notwithstanding the foregoing, reliance by any and all third parties upon this deliverable, Ensolum's services or any subsequent report shall be limited in the aggregate to the fair market value of the services provided by Ensolum.

"Limited Mold Assessment". This deliverable uses the term "Limited Mold Assessment" to denote that Ensolum's mold assessment services are limited: (i) to certain portions of the building structure (e.g., the Investigation Areas), by non-destructive sampling methodologies, and/or by access limitations to building materials or components within the Investigation Area(s). In contrast to a "Limited Assessment" is a comprehensive assessment would involve destructive sampling methods with the assessment to be conducted throughout the entire building structure.

Time sensitive. One must keep in mind that mold assessments are essentially a "snap shot in time," and the results are only relevant at the time of site reconnaissance. Because mold, when biologically active, is a living organism, its presence is influenced and controlled by environmental conditions. Mold assessments, therefore, are "time sensitive" in that the presence and concentration of mold and similar organisms in building structures or in the air is directly influenced by environmental conditions (such as humidity, moisture, nutrients and substrates), whether natural or caused by man, which conditions may vary significantly over relatively short periods of time.

Methodologies. Currently, mold assessment methodologies and protocols in Texas are governed by persuasive guidelines (rather than promulgated federal/state or local regulations). Presently, there is no data that supports a threshold limit or dose-response relationship for exposure to mold aeroallergens, individual pathogens, opportunistic pathogens and/or mycotoxins. The Occupational Safety and Health Administration (OSHA), the National Institute of Occupational Safety and Health (NIOSH) and other non-governmental associations, have not yet established permissible exposure limits (PELs), recommended exposure limits (RELs), or other limit values for fungi. Because no limit values presently exist. Ensolum will not and cannot represent that the site contains no harmful microbes, mold, fungi, or their metabolites, or other latent conditions beyond those identified by the limited scope of this mold assessment.

Findings limited. Findings in an LMA are limited due to the nature of the information obtained such as a visual reconnaissance of readily accessible areas of building structures, interview information, anecdotal information, and limited sampling data derived from one or more specific sampling events. Ensolum cannot warrant the accuracy of prior or subsequent information/data, reports and services performed by other firms at the Site. Ensolum assumes no responsibility or liability for errors in information or data provided by or through the client or third party sources. Ensolum's services are not to be construed as legal or medical interpretation or advice.

Moisture Intrusion Limitation. Ensolum performs mold assessment services and is not a moisture intrusion, HVAC, plumbing or building envelope specialist. However, during the course of conducting its mold assessment services, Ensolum will report observed areas of apparent moisture intrusion. Ensolum does not and will not investigate the cause or causes of such observed moisture intrusion. In the event apparent moisture intrusion is observed, Ensolum will recommend that the client contact a specialist (i.e., plumbing contractor, building envelope specialist, HVAC contractor, water intrusion specialist, etc.) to assist the client in determining the specific cause or causes of the moisture intrusion and remedial options.

Certificate of Mold Damage Remediation (CMDR). For mold remediation projects (above certain size thresholds), applicable Texas law (i.e., Texas Occupation Code Section 1958.54 and T.A.C. Section 295.397 (the Texas Mold Assessment and Remediation Rules), requires that a "Certificate of Mold Damage Remediation" be issued by the Mold Remediation Contractor upon successful completion of the project. This certificate must be provided to property owners no later than the 10th day after the date on which the mold remediation is completed at a property. The Mold Remediation Certificate issued by the Mold Remediation Contractor must include a certification by the Mold Assessor that the mold remediation project has been successfully completed in accordance with the mold remediation protocol.

Be advised that Ensolum's issuance of a CMDR upon successful completion of a Mold Remediation project does not mean, warrant or otherwise guarantee that mold will not be subsequently found in any portion of an Investigation Area or the Site. In the event that Ensolum is engaged to render services in connection with a mold remediation project, ENSOLUM will require Client to provide to Ensolum written documentation that all sources of moisture which contributed to the presence of mold in the Investigation Area have been fully remediated and corrected prior to achieving clearance.

DATE: May 14, 2019

TO: Justin Gilbreath, Assistant Principal

SUBJECT: IAQ - Air Test Results - The Colony HS -Field House Weight Room

On Wednesday 5/1, Ensolum LLC Air tested the Field House Weight Room. It is typically assumed that indoor spore levels in an area with filtered or air-conditioned air, and activity levels associated with schools' average below the outdoor levels. Data from the airborne fungi sampling indicated that the total indoor concentration of mold/fungi in the Field House Weight Room, was **152.3%** of the outdoor levels. Utilizing this theory, the indoor concentrations were above the acceptable guidelines for areas with filtered air or air conditioning. **The Aspergillus/Penicillium was exceptionally high. The East Zone Facility Services will put the Air Scrubber Machine and 2 Dehumidifiers in the Weight Room today, for a week. We will retest the Weight Room in the middle of June.** If you have any questions, please call me.
Thanks,
Paul

Paul Siddall
Maintenance Energy Auditor (IAQ)
Facility Services
Lewisville ISD
340 Lake Haven Rd
Lewisville, TX 75057

May 15, 2019

Lewisville Independent School District
340 Lake Haven
Lewisville, Texas 75057
Attn: Mr. Paul Siddall

Re:

Limited Mold Assessment
The Colony High School – Weight Room
4301 Blair Oaks Drive
The Colony, Texas
Ensolum Project No. 01A.1288.007

Ensolum, LLC (Ensolum) was retained to perform limited mold assessment services within the Football Weight Room of The Colony High School located at 4301 Blair Oaks Drive in The Colony, Texas. Enclosed is the report, including analytical data.

Ensolum appreciates this opportunity to be of service and looks forward to our continued work together. Please contact the undersigned with any questions or concerns you may have.

Sincerely,

Nolan Domain
Mold Assessment Consultant
MAC1479 EXP: 11/9/2019

Darren G. Bowden
Principal
MAC0321 EXP: 2/15/20

1.0 INTRODUCTION

Ensolum was retained by Mr. Paul Siddall, LISD, to complete a Limited Mold Assessment of the Football Weight Room addressed at 4301 Blair Oaks Drive, The Colony, Texas. The purpose of this investigation was to determine if elevated concentrations of airborne fungal spores and structures were present within the above-referenced office.

Mr. Nolan Domain completed the on-site investigation on May 1, 2019. The Limited Mold Assessment was performed in response to a complaint of possible indoor air quality issues within the classroom.

2.0 PROCEDURE

Ensolum visually inspected accessible areas of the office. No visible water damage or odors were observed in the following locations:

VISIBLE WATER DAMAGE		
LOCATION	DATE	EXPLAINATION
Football Weight Room	5-1-2019	N/A

It is possible that water-damaged building materials are present within the adjacent areas but were not reasonably accessible due to access limitations.

Following the inspection of potential water-damaged building materials, Ensolum conducted a moisture investigation in the identified areas to determine if nonvisible water-damaged materials and other building materials within the investigation area were present. The moisture investigation was completed with a GE Protimeter BLD5364 moisture meter on accessible porous and semi-porous building materials in each area of concern. At the time of investigation, monitored building materials did not exhibit elevated moisture concentrations in comparison with similar and non-affected building materials in the structure and standard scientific guidelines.

Representative Relative Humidity readings were collected and recorded using a Vaisala HM40 Humidity and Temperature Meter. Measurements recorded during the investigation are listed in the chart below:

.

TEMPERATURE, RELATIVE HUMIDITY & SPECIFIC HUMIDITY				
LOCATION	DATE	Temperature: F	Relative Humidity	Specific Humidity
Football Weight Room	5-1-2019	54.5°	64.5%	40.0

Area air samples were collected with Allergenco-D spore trap cassettes and analyzed for airborne fungal spores and structures. Samples were collected at a rate of 15 liters per minute. Indoor air sample(s) were collected for a five (5) minute period of time (75 liters) at a height of approximately five (5) feet above finished floor (AFF). Outdoor air samples were collected for a five (5) minutes period of time (75 liters) at a height of approximately five (5) feet above level ground. American Conference of Governmental Industrial Hygienists (ACGIH) guidelines were followed for the sample collection. Fungal air samples were collected in the following areas:

SPORE TRAP LOCATIONS	
SAMPLE NUMBER	LOCATION
1	Football Weight Room
2	Outdoor North Center By Tennis Courts
3	Outdoor South Side East

3.0 RESULTS

Currently, there are no regulatory standards for airborne fungal contamination. Therefore, results of the fungal analysis are compared against scientific guidelines. Bioaerosol samples are evaluated by comparing the indoor samples against the outdoor sample. The same types of fungi should be found in both the indoor and outdoor samples. Should higher fungal concentrations occur in the indoor sample(s) or complaint areas, this generally indicates there is a source of fungal growth in the area. The types of fungi are also evaluated-the same types/genus of fungi should be present in both the indoor/complaint and outdoor/non-complaint samples.

The results of the fungal air samples collected were evaluated. Air testing performed using spore traps found that airborne mold spores in the room were elevated. The indoor sample collected yielded twenty seven (27) counts of Stachybotrys, twenty seven (27) counts of Drechslera / Bipolaris group and thirteen (13) counts of Alternaria that was not identified in the exterior samples. The Indoor air sample reported Aspergillus / Penicillium at 10,300 counts while the outdoor samples reported 307 counts.

4.0 CONCLUSIONS

Based on ENSOLUM's limited assessment and the analytical results, it appears that the indoor air quality, as it relates to airborne fungi, was elevated.

APPENDIX A

ANALYTICAL DATA

IAQ Mold Report

Summary

2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460

TDLR License No.: LAB0117
AIHA EMPAT ID: 102577

Client : Ensolum, LLC
Project : LISD - Central ES Room 523
Project # : 01A.1288.023
Sample Type: Spore Trap, Non-cultured
Test Method: Mold: ASTM D7391-17e1 - Standard Profile

Lab Job No. : 19F-05242
Report Date : 05/06/2019 11:26 AM
Sample Date: 05/03/2019
Spore Trap Type: Allergenco D

On 5/3/2019, three (3) samples were submitted by Nolan Domain of Ensolum, LLC (located at 2351 W. Northwest Hwy Suite #1203, Dallas, TX 75220) for Spore Trap, Non-cultured mold analysis. This report consists of three sections; a summary section, a data detail section, and an analytical notes section.

Sample Number	Volume (liters)	Sample Description	Identification	Concentration spores/cubic meter	
1	75	Room 523 * See Analytical Notes report for further details	Basidiospores	1471	79%
			Aspergillus / Penicillium	147	8%
			Ascospores	80	4%
			Cladosporium	53	3%
			Drechslera / Bipolaris group	40	2%
			Hyphal / Spore Fragments - Dematiaceous	27	1%
			Myxomycete / Rust / Smut	27	1%
			Coprinus group	13	<1%
			Curvularia	13	<1%
			Total:	1871	100%
2	75	Outside Southwest Exit by Gym * See Analytical Notes report for further details	Basidiospores	17333	83%
			Ascospores	2000	10%
			Coprinus group	933	4%
			Cladosporium	187	<1%
			Aspergillus / Penicillium	160	<1%
			Diatrypaceae	93	<1%
			Agaricales group	80	<1%
			Drechslera / Bipolaris group	40	<1%
			Fusarium	27	<1%
			Cercospora	13	<1%
			Alternaria	13	<1%
			Total:	20879	100%

IAQ Mold Report

Summary

2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460

TDLR License No.: LAB0117
AIHA EMPAT ID: 102577

Client : Ensolum, LLC
Project : LISD - Central ES Room 523
Project # : 01A.1288.023
Sample Type: Spore Trap, Non-cultured
Test Method: Mold: ASTM D7391-17e1 - Standard Profile

Lab Job No. : 19F-05242
Report Date : 05/06/2019 11:26 AM
Sample Date: 05/03/2019
Spore Trap Type: Allergenco D

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Sample Number	Volume (liters)	Sample Description	Identification	Concentration spores/cubic meter	
3	75	Outside Front Entry * See Analytical Notes report for further details	Basidiospores	29000	89%
			Ascospores	1333	4%
			Cladosporium	613	2%
			Coprinus group	547	2%
			Diatrypaceae	480	1%
			Aspergillus / Penicillium	187	<1%
			Cercospora	80	<1%
			Myxomycete / Rust / Smut	80	<1%
			Agaricales group	67	<1%
			Fusarium	53	<1%
			Hyphal / Spore Fragments - Dematiaceous	13	<1%
			Helicomyces	13	<1%
			Alternaria	13	<1%
			Total:	32479	100%

Analyst(s): M. Garcia

Lab Director : Heather Lopez — Approved Signatory : Heather Lopez

Lab Director : Bruce Crabb — Approved Signatory : Bruce Crabb

Thank you for choosing Moody Labs

IAQ Mold Report

Data Detail

Moody Labs
2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460

TDLR License No.: LAB0117
AIHA EMPAT ID: 102577

Client : Ensolum, LLC
Project : LISD - Central ES Room 523
Project # : 01A.1288.023
Sample Type: Spore Trap, Non-cultured
Test Method: Mold: ASTM D7391-17e1 - Standard Profile

Lab Job No. : 19F-05242
Report Date : 05/06/2019 11:26 AM
Sample Date: 05/03/2019
Spore Trap Type: Allergenco D

This report consists of three sections; a summary section, a data detail section, and an analytical notes section. Results may not be reported except in full.

Sample ID:	1					2					3				
Location:	Room 523					Outside Southwest Exit by Gym					Outside Front Entry				
Media Expires On:	Dec 2019					Dec 2019					Dec 2019				
Notes Included:	See Analytical Notes					See Analytical Notes					See Analytical Notes				
Volume:	75					75					75				
	raw ct.	RL	spores/m³	%total	spores/m³ SF	raw ct.	RL	spores/m³	%total	spores/m³ SF	raw ct.	RL	spores/m³	%total	spores/m³ SF
Agaricales group						6	13	80	<1%	80	5	13	67	<1%	70
Alternaria						1	13	13	<1%	10	1	13	13	<1%	10
Ascospores	6	13	80	4%	80	100	20	2000	10%	2000	100	13	1333	4%	1300
Aspergillus / Penicillium	11	13	147	8%	150	12	13	160	<1%	160	14	13	187	<1%	190
Basidiospores	103	14	1471	79%	1500	130	133	17333	83%	17000	145	200	29000	89%	29000
Cercospora						1	13	13	<1%	10	6	13	80	<1%	80
Chaetomium															
Cladosporium	4	13	53	3%	50	14	13	187	<1%	190	46	13	613	2%	610
Coprinus group	1	13	13	<1%	10	70	13	933	4%	930	41	13	547	2%	550
Curvularia	1	13	13	<1%	10										
Diatrypaceae						7	13	93	<1%	90	36	13	480	1%	480
Drechslera / Bipolaris group	3	13	40	2%	40	3	13	40	<1%	40					
Fusarium						2	13	27	<1%	30	4	13	53	<1%	50
Helicomyces											1	13	13	<1%	10
Hyphal / Spore Fragments - Dematiace	2	13	27	1%	30						1	13	13	<1%	10
Hyphal / Spore Fragments - Hyaline															
Memnoniella															
Myxomycete / Rust / Smut	2	13	27	1%	30						6	13	80	<1%	80
Stachybotrys															
TOTALS	133		1871	100%	1900	346		20879	100%	21000	406		32479	100%	32000
Analyst	M. Garcia					M. Garcia					M. Garcia				
Analysis Date	5/6/2019					5/6/2019					5/6/2019				
Debris Rating	2					2					2				
Debris Composition															
Fibers	1/5					1/5					1/5				
Inorganic/Other	1/5					1/5					1/5				
Insect Parts	0/5					0/5					0/5				
Pollen	1/5					1/5					1/5				
Skin/Dander	1/5					1/5					1/5				

End of Data Detail section
19F-05242

IAQ Mold Report

Analytical Notes

Moody Labs
2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460
TDLR License No.: LAB0117
AIHA EMPAT ID: 102577

Client : Ensolum, LLC
Project : LISD - Central ES Room 523
Project # : 01A.1288.023
Sample Type: Spore Trap, Non-cultured
Test Method: Mold: ASTM D7391-17e1 - Standard Profile

Lab Job No. : 19F-05242
Report Date : 05/06/2019 11:26 AM
Sample Date : 05/03/2019
Spore Trap Type: Allergenco D

This report consists of three sections; a summary section, a data detail section, and an analytical notes section. Results may not be reported except in full.

Samples Analyzed

Sample No	1 : Room 523
Notes:	Please note: the minimum detection limit for Basidiospores is 14 spores / cubic meter. When comparing results to other samples, use calculated results, not raw numbers.
Sample No	2 : Outside Southwest Exit by Gym
Notes:	Please note: the minimum detection limit for Basidiospores is 133 spores / cubic meter. When comparing results to other samples, use calculated results, not raw numbers. Please note: the minimum detection limit for Ascospores is 20 spores / cubic meter. When comparing results to other samples, use calculated results, not raw numbers.
Sample No	3 : Outside Front Entry
Notes:	Please note: the minimum detection limit for Basidiospores is 200 spores / cubic meter. When comparing results to other samples, use calculated results, not raw numbers.

Field Blanks

No discernable field blanks were submitted with this set of samples.

IAQ Mold Report

Analytical Notes

2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460

TDLR License No.: LAB0117
AIHA EMPAT ID: 102577

Client : Ensolum, LLC
Project : LISD - Central ES Room 523
Project # : 01A.1288.023
Sample Type: Spore Trap, Non-cultured
Test Method: Mold: ASTM D7391-17e1 - Standard Profile

Lab Job No. : 19F-05242
Report Date : 05/06/2019 11:26 AM
Sample Date : 05/03/2019
Spore Trap Type: Allergenco D

This report consists of three sections; a summary section, a data detail section, and an analytical notes section. Results may not be reported except in full.

Methods

Method: ASTM D7391-17e1: Categorization and Quantification of Airborne Fungal Structures in an Inertial Impaction Sample by Optical Microscopy.
Samples are read at 100% unless noted. Partial readings may be employed when concentrations are elevated. Use final spore concentrations, not raw spore counts, for interpretation of results.

Calculation: Spores/cubic meter = (Raw spore count)*(RL)
Note: RL (Reporting Limit) is based upon 1 raw spore count.
Moody Labs recommends two significant figures for calculated values based on ASTM D7391-17e1.

This report must not be used by the customer to claim product certification, approval, or endorsement by AIHA, ISO, or any agency of the Federal Government.

Debris Rating Key

0 - No linear trace detected
1 - Trace particulate/debris
2 - Light particulate/debris
3 - Moderate particulate/debris.
4 - Substantial particulate/debris
5 - Extensive particulate/debris
6 - Field blank
10 - Hold Sample
11 - Modified Analysis per Client Instructions

NOTE: Particulate/debris are defined as skin, fibers, pollen grains, insect parts, fungal and/or other non-fungal particles.

IAQ Mold Report

Analytical Notes

Moody Labs
2051 Valley View Lane
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Project # : 01A.1288.023
Sample Type: Spore Trap, Non-cultured
Test Method: Mold: ASTM D7391-17e1 - Standard Profile

Lab Job No. : 19F-05242
Report Date : 05/06/2019 11:26 AM
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Spore Trap Type: Allergenco D

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End of Analytical Notes section
19F-05242

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IAQ Mold Report

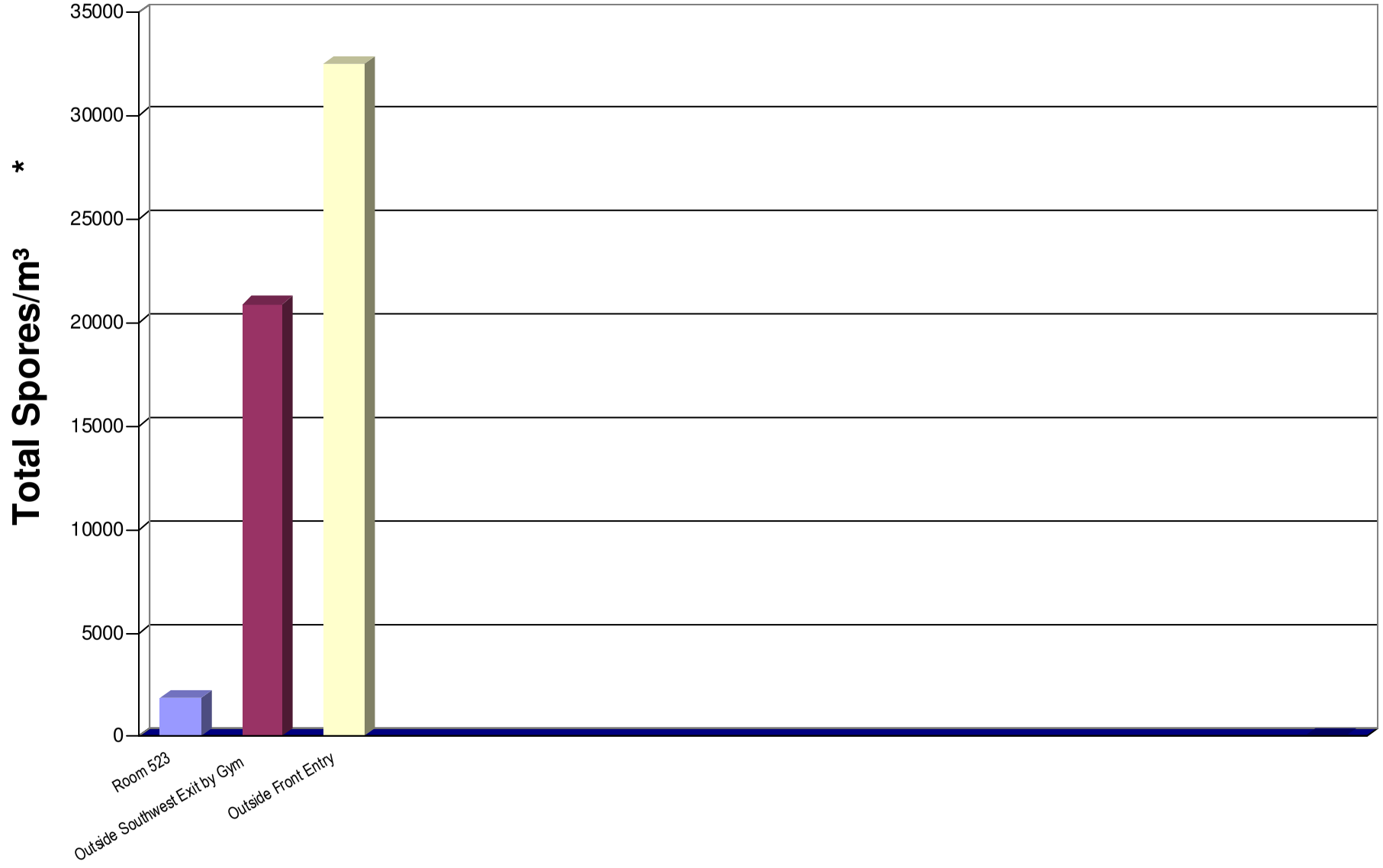
Supplemental Overview

Moody Labs
2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460

TDLR License No.: LAB0117
AIHA EMPAT ID: 102577

Client : Ensolum, LLC
Project : LISD - Central ES Room 523
Project # : 01A.1288.023

Lab Job No. 19F-05242
Report Date 05/06/2019 11:26 AM
Sample Date : 05/03/2019



Moody Labs
2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460

IAQ Mold Report

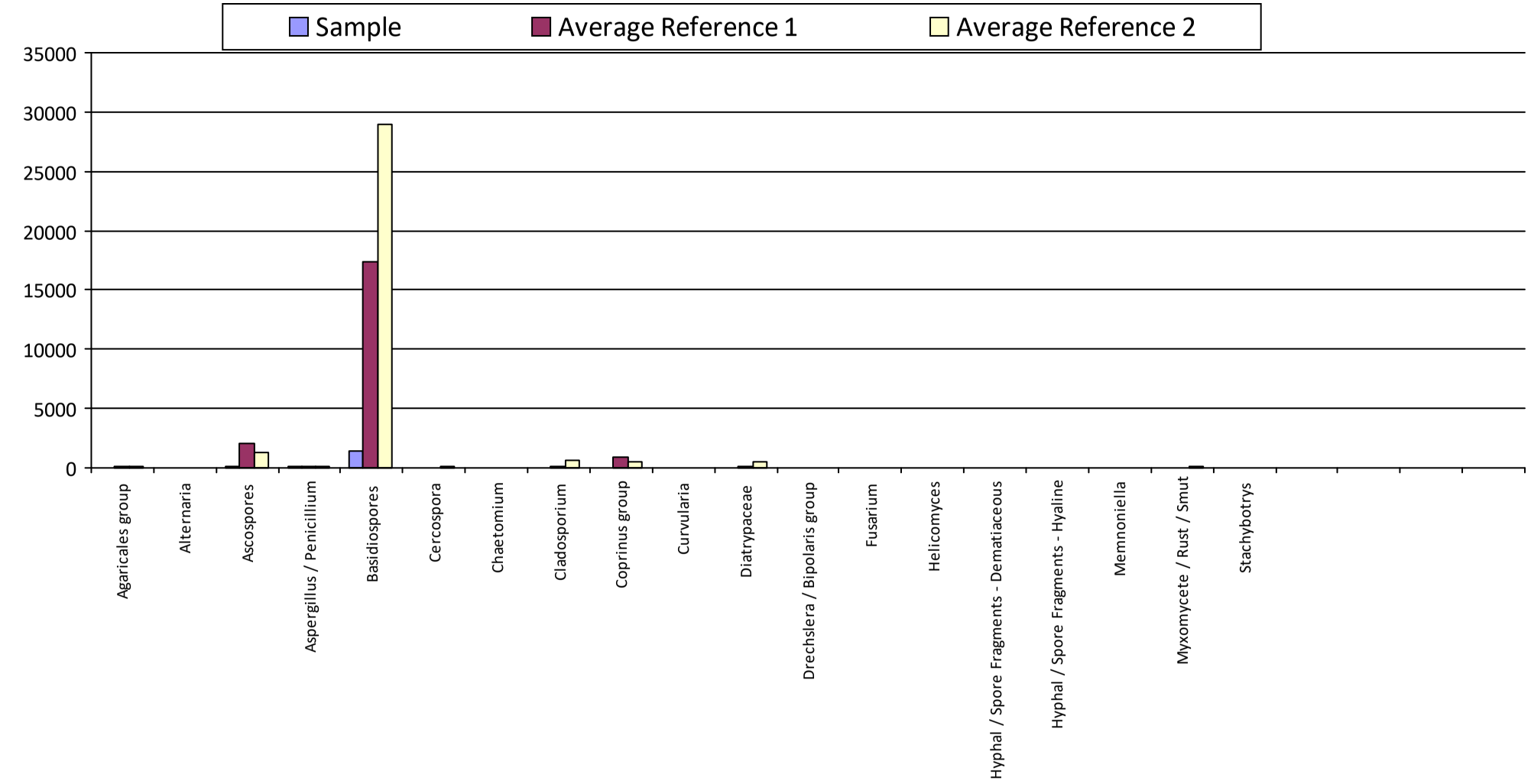
Supplemental Overview

TDLR License No.: LAB0117
AIHA EMPAT ID: 102577

Client : Ensolum, LLC
Project : LISD - Central ES Room 523
Project # : 01A.1288.023

Room 523

Lab Job No. 19F-05242
Report Date 05/06/2019 11:26 AM
Sample Date : 05/03/2019



Average Reference 1 = Outside Southwest Exit by Gym

Average Reference 2 = Outside Front Entry

Moody Labs
2051 Valley View Lane
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IAQ Mold Report

Supplemental Overview

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Outside Southwest Exit by Gym

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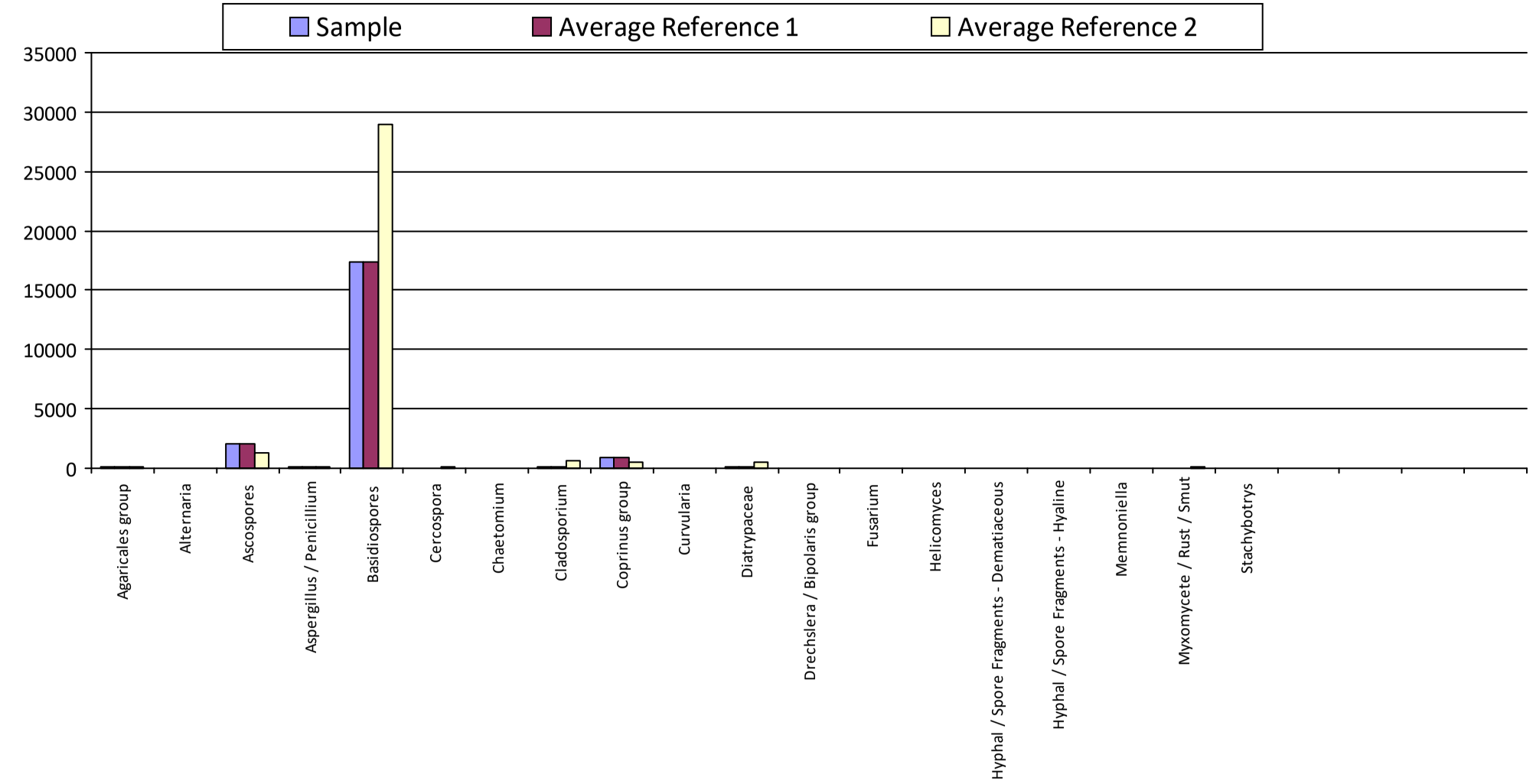

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Moody Labs
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Farmers Branch, TX 75234 Phone: (972) 241-8460

IAQ Mold Report

Supplemental Overview

TDLR License No.: LAB0117
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Client : Ensolum, LLC
Project : LISD - Central ES Room 523
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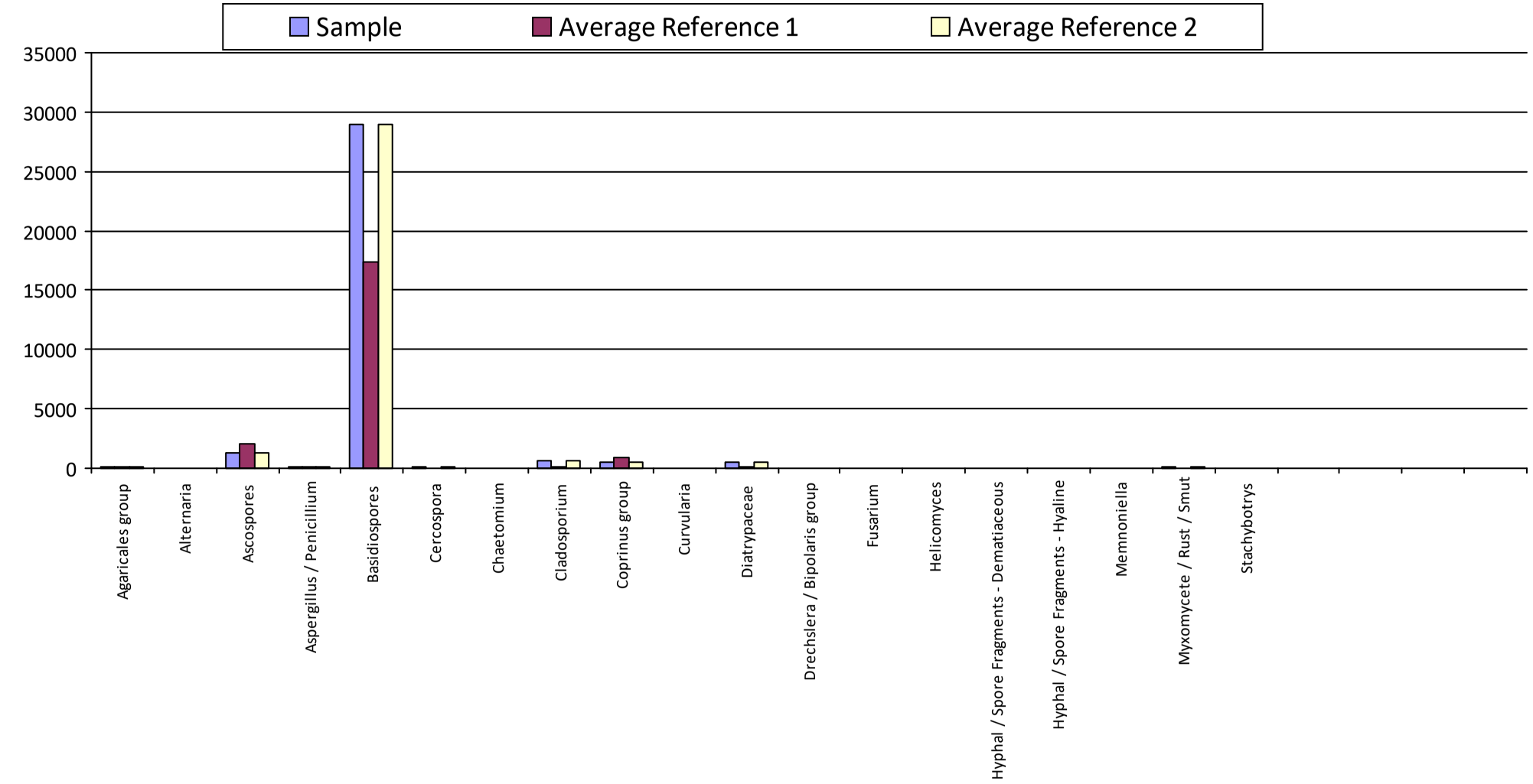
Outside Front Entry

Lab Job No. 19F-05242
Report Date 05/06/2019 11:26 AM
Sample Date : 05/03/2019



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End of Supplemental Overview section

APPENDIX B

DEFINITIONS AND LIMITATIONS

ENSOLUM

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Findings limited. Findings in an LMA are limited due to the nature of the information obtained such as a visual reconnaissance of readily accessible areas of building structures, interview information, anecdotal information, and limited sampling data derived from one or more specific sampling events. Ensolum cannot warrant the accuracy of prior or subsequent information/data, reports and services performed by other firms at the Site. Ensolum assumes no responsibility or liability for errors in information or data provided by or through the client or third party sources. Ensolum's services are not to be construed as legal or medical interpretation or advice.

Moisture Intrusion Limitation. Ensolum performs mold assessment services and is not a moisture intrusion, HVAC, plumbing or building envelope specialist. However, during the course of conducting its mold assessment services, Ensolum will report observed areas of apparent moisture intrusion. Ensolum does not and will not investigate the cause or causes of such observed moisture intrusion. In the event apparent moisture intrusion is observed, Ensolum will recommend that the client contact a specialist (i.e., plumbing contractor, building envelope specialist, HVAC contractor, water intrusion specialist, etc.) to assist the client in determining the specific cause or causes of the moisture intrusion and remedial options.

Certificate of Mold Damage Remediation (CMDR). For mold remediation projects (above certain size thresholds), applicable Texas law (i.e., Texas Occupation Code Section 1958.54 and T.A.C. Section 295.397 (the Texas Mold Assessment and Remediation Rules), requires that a "Certificate of Mold Damage Remediation" be issued by the Mold Remediation Contractor upon successful completion of the project. This certificate must be provided to property owners no later than the 10th day after the date on which the mold remediation is completed at a property. The Mold Remediation Certificate issued by the Mold Remediation Contractor must include a certification by the Mold Assessor that the mold remediation project has been successfully completed in accordance with the mold remediation protocol.

Be advised that Ensolum's issuance of a CMDR upon successful completion of a Mold Remediation project does not mean, warrant or otherwise guarantee that mold will not be subsequently found in any portion of an Investigation Area or the Site. In the event that Ensolum is engaged to render services in connection with a mold remediation project, ENSOLUM will require Client to provide to Ensolum written documentation that all sources of moisture which contributed to the presence of mold in the Investigation Area have been fully remediated and corrected prior to achieving clearance.