DATE: April 25, 2017

TO: Tasia Thompson, Principal

SUBJECT: Ethridge ES - IAQ - Initial Contact - Room A-11

On Tuesday 4/18, I received Work Order #408339: *"A-11 continues to have a very bad smell in it. Plumbing has checked the areas to see if it may be plumbing related and I notice that work order closed so they must not have found anything. (WO# 406043) The smell is the worst when room opens in the morning before we leave the door open. Not sure what else to do. But several people have complained about the smell in this room. thanks /CFC"*. On Thursday 4/20, 4/24 and 4/25, I have inspected Room A-11 early in the morning. After visiting with the teacher, I have submitted a P.O. request to Air Test the room. Apex-Titan will be testing at the latter part of this week, and we should have the test results by Tuesday, 5/2. If you have any questions, please contact me.
Thanks,
Paul

Paul Siddall
Maintenance Energy Auditor (IAQ)
Facility Services
Lewisville ISD
340 Lake Haven Rd
Lewisville, TX 75057
Cell: 469-446-8882

DATE: April 28, 2017

TO: Tasia Thompson, Principal

SUBJECT: Ethridge ES - IAQ - Air Test Results - Room A-11

On Tuesday 4/25, Apex-Titan Air tested Room A-11. 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 Room A-11, was **8.9%** of the outdoor levels. Utilizing this theory, the indoor concentrations are within the acceptable guidelines for areas with filtered air or air conditioning. 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

April 28, 2017

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

Re: Limited Mold Assessment Services
Ethridge Elementary School
Room A-11
6001 Ethridge
The Colony, Texas
LISD PO No. 91732993-00
Apex Project No. 725010727073

Introduction

Apex TITAN, Inc., a subsidiary of Apex Companies, LLC (APEX) conducted limited mold assessment activities for the Lewisville Independent School District (Lewisville I.S.D.) within Ethridge Elementary School located at 6001 Ethridge in The Colony, Texas (hereinafter referred to as the "Site"). The investigation was limited to areas of the Site identified by Lewisville I.S.D. as described below. The assessment was performed by Mr. Clinton S. Jech, a State of Texas licensed Mold Assessment Technician (Lic. No. MAT1075) on April 25, 2017 Apex's mold services definitions and limitations are included as an attachment to this report.

Investigation Areas

Lewisville I.S.D. identified the following physical portions of the Site as the target investigation areas ("Investigation Areas") for mold assessment: readily accessible areas within room A-11. Apex's mold assessment services were limited to the Investigation Area(s) identified by Lewisville, I.S.D. Additional areas or portions of the Site were out-of-scope and not included in Apex's mold assessment or this report at this time.

Scope of Work

As set forth in Apex's Mold Assessment Proposal (No. P725010727083) dated April 25, 2017. Apex's scope-of-work was to provide visual and/or analytical mold assessment and related services in the Investigation Areas which included:

Visual Reconnaissance: Apex performed a visual reconnaissance of the Investigation Areas for visible indications of moisture intrusion (as indicated by staining or visible moisture) and/or suspect mold growth. Apex's visual reconnaissance only included readily accessible or visible portions of the Investigation Areas.

Suspect Mold Growth Sampling and Analysis: Apex collected limited ambient air samples for nonviable mold spores utilizing Air-O-Cell cassettes. "Air-O-Cell" refers to slit impaction air sampling cassettes manufactured by Zefon Analytical Accessories, St. Petersburg, Florida.

Site Reconnaissance Observations/Findings and Recommendations

Apex' Mold Assessment Site reconnaissance was performed on April 25, 2017 by Mr. Clinton S. Jech. Apex's visual reconnaissance of the Investigation areas revealed the following:

Temperature and Relative Humidity

Temperature readings collected inside the room was reported as 74.3 degrees Fahrenheit while relative humidity was reported as 38.4 percent. Temperature readings collected outside the building ranged from 83.45 to 84.5 degrees Fahrenheit while outside relative humidity ranged from 47.1 to 50.8 percent.

Relative humidity is a measure of the moisture content of air and is closely tied to the comfort of the office/workplace temperature. As with temperature, there are no regulations governing acceptable office/workplace humidity ranges. Humidity levels in the office/workplace are not only related to health effects, but also have operational impacts on modern office equipment.

Workplace/office temperatures have historically been considered a subjective factor because the perception of uncomfortable temperature levels is specific to each individual. There are no regulations governing acceptable office/workplace temperature ranges, but significant research has been conducted which indicates that there are temperature ranges that are not only comfortable but also result in optimum performance. ASHRAE (American Society of Heating, Refrigerating & Air Conditioning Engineers) has published guidelines describing thermal environmental conditions that at least 80% of the persons who occupy that environment will find acceptable or "comfortable." Table I below explains the applicable limits and guidelines.

Table I
Acceptable Ranges of Temperature and Humidity

Relative Humidity	Winter Temperatures	Summer Temperatures
30%	68.5 to 76°F	74 to 80°F
40%	68.5 to 75.5°F	73 to 79.5°F
50%	68.5 to 74.5°F	73 to 79°F
60%	68 to 74°F	72.5 to 78°F

Apex utilized a Protimeter Moisture Measurement System (MMS) instrument (Model No. BLD2000) to measure and diagnose dampness in the drywall within random areas. The MMS is a battery powered handheld unit that is equipped with hydrostick probes to measure moisture content in wood, drywall and other and non-conductive materials. The device measures electrical conductivity of building materials and compares the conductivity readings to an internal, electronic standard reading for normal or "dry" materials.

Moisture content readings were obtained by pushing the moisture probe pins into surfaces. The measured values were then displayed on a colored scale depicting if the materials measured were normal (dry), higher than normal but not critical (at risk) or contained excessive moisture levels (wet). Based on the manufacturer's guidelines, the instrument measurement values are described below:

< 5%	Out of Range
> 5% but < 16%	Normal
> 17% but < 20%	Higher than Normal but Not Critical
> 20%	Excessive Moisture Levels

Moisture meter readings taken from the walls within the room ranged from 10 to 12% which is considered normal by the manufacturer.

Air Monitoring Results

Apex collected one (1) sample from the interior of the investigation area and two (2) samples from the exterior of the building. The microbial samples were analyzed by Steve Moody Micro Services, LLC (SMMS) in Farmers Branch, Texas; SMMS is a State of Texas licensed mold analysis laboratory and accredited under the AIHA Laboratory Quality Assurance Program for Environmental Microbiology.

Air testing performed using spore traps indicated that total airborne mold spores in the classroom was lower as compared to those measured outside of the building at the time the sampling was performed. The total fungal spore concentration within the investigation area was reported as 741 counts/m^3, while the exterior level ranged from 6,854 to 8,294 counts/m^3.

The American Conference of Governmental Industrial Hygienists (ACGIH) sets forth assessment criteria related to the "indoor/outdoor" relationship where the indoor air quality should be at or below that of outdoor air quality with regard to fungal spores (see ACGIH Bioaerosols, Assessment and Controls publication, 1999).

Suspect Mold

No visible mold was observed during the assessment. No orders or excessive dust were noted at the time of the assessment.

Conclusions and Recommendations

Based on Apex's limited assessment and the analytical results collected, it appears that the indoor air quality, as it relates to airborne fungi was within recommended guidelines on the day of the assessment. Additional investigation of the malodor should be performed.

If you have any questions regarding this report or if we can assist you with any other matter, please contact the undersigned at (469) 365-1140.

Sincerely,
Apex TITAN, Inc.

Clinton. S. Jech
Manager, Field Services
Texas Mold Assessment Technician, Lic. No. MAT1075

Darren G. Bowden
Senior Program Manager
Texas Mold Assessment Consultant Lic. No. MAC0321

Attachments: Analytical Results/Chain of Custody, Mold Services Definitions & Limitations

ATTACHMENT 1

Analytical Results/Chain of Custody

IAQ Mold Report

Summary

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

DSHS License No.: LAB0117
AIHA EMPAT ID: 102577

Client : Apex Titan, Inc. - Dallas
Project : Ethridge ES Room A-11
Project # : 725010729-073
Sample Type: Spore Trap, Non-cultured
Test Method: Mold: ASTM D7391-09 - Standard Profile

Lab Job No. : 17F-04998
Report Date : 04/27/2017 2:22 PM
Sample Date: 04/25/2017
Spore Trap Type: Zefon - Air-O-Cell

On 4/25/2017, three (3) samples were submitted by Clint Jech of Apex Titan, Inc. - Dallas (located at 12100 Ford. Rd., Suite 401, Farmers Branch, TX 75234) 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	150	Exterior, Northwest * See Analytical Notes report for further details	Cladosporium	2711	33%
			Basidiospores	2444	29%
			Ascospores	964	12%
			Hyphal / Spore Fragments - Dematiaceous	720	9%
			Myxomycete / Rust / Smut	587	7%
			Alternaria	187	2%
			Aspergillus / Penicillium	147	2%
			Agaricales group	113	1%
			Coprinus group	107	1%
			Epicoccum	60	<1%
			Hyphal / Spore Fragments - Hyaline	53	<1%
			Oidium	53	<1%
			Drechslera / Bipolaris group	40	<1%
			Torula	20	<1%
			Pithomyces	20	<1%
			Cercospora	20	<1%
			Paecilomyces	20	<1%
			Curvularia	7	<1%
			Periconia	7	<1%
			Spegazzinia	7	<1%
			Beltrania	7	<1%
			Total:	8294	100%

IAQ Mold Report

Summary

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2051 Valley View Lane
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AIHA EMPAT ID: 102577

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Sample Number	Volume (liters)	Sample Description	Identification	Concentration spores/cubic meter	
2	150	Exterior, East * See Analytical Notes report for further details	Cladosporium	3633	53%
			Ascospores	794	12%
			Basidiospores	607	9%
			Hyphal / Spore Fragments - Dematiaceous	580	8%
			Alternaria	260	4%
			Aspergillus / Penicillium	253	4%
			Myxomycete / Rust / Smut	167	2%
			Torula	140	2%
			Hyphal / Spore Fragments - Hyaline	133	2%
			Coprinus group	80	1%
			Paecilomyces	40	<1%
			Epicoccum	33	<1%
			Fusarium	33	<1%
			Oidium	27	<1%
			Drechslera / Bipolaris group	20	<1%
			Curvularia	20	<1%
			Pithomyces	20	<1%
			Cercospora	7	<1%
			Nigrospora	7	<1%
			Total:	6854	100%

IAQ Mold Report

Summary

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

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AIHA EMPAT ID: 102577

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Project : Ethridge ES Room A-11
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Sample Number	Volume (liters)	Sample Description	Identification	Concentration spores/cubic meter	
3	150	Room A-11	Myxomycete / Rust / Smut	173	23%
			Cladosporium	173	23%
			Hyphal / Spore Fragments - Dematiaceous	167	23%
			Basidiospores	53	7%
			Alternaria	53	7%
			Ascospores	47	6%
			Aspergillus / Penicillium	27	4%
			Drechslera / Bipolaris group	20	3%
			Oidium	7	<1%
			Nigrospora	7	<1%
			Pithomyces	7	<1%
			Curvularia	7	<1%
			Total:	741	100%

Analyst(s): Rebecca Lutz

Lab Manager : Heather Lopez

Approved Signatory : Heather Lopez

Lab Director : Bruce Crabb

Approved Signatory : Bruce Crabb

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IAQ Mold Report

Data Detail

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

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Sample ID:	**1**				**2**				**3**			
Location:	Exterior, Northwest				Exterior, East				Room A-11			
Media Expires On:	Nov 2017				Nov 2017				Nov 2017			
Notes Included:	See Analytical Notes				See Analytical Notes							
Volume:	150				150				150			
	raw ct.	MDL	spores/m³		raw ct.	MDL	spores/m³		raw ct.	MDL	spores/m³	
Agaricales group	17	6.67	113	1%								
Alternaria	28	6.67	187	2%	39	6.67	260	4%	8	6.67	53	7%
Ascospores	106	9.09	964	12%	119	6.67	794	12%	7	6.67	47	6%
Aspergillus / Penicillium	22	6.67	147	2%	38	6.67	253	4%	4	6.67	27	4%
Basidiospores	110	22.22	2444	29%	91	6.67	607	9%	8	6.67	53	7%
Beltrania	1	6.67	7	<1%								
Cercospora	3	6.67	20	<1%	1	6.67	7	<1%				
Chaetomium												
Cladosporium	122	22.22	2711	33%	109	33.33	3633	53%	26	6.67	173	23%
Coprinus group	16	6.67	107	1%	12	6.67	80	1%				
Curvularia	1	6.67	7	<1%	3	6.67	20	<1%	1	6.67	7	<1%
Drechslera / Bipolaris group	6	6.67	40	<1%	3	6.67	20	<1%	3	6.67	20	3%
Epicoccum	9	6.67	60	<1%	5	6.67	33	<1%				
Fusarium					5	6.67	33	<1%				
Hyphal / Spore Fragments - Dematiac	108	6.67	720	9%	87	6.67	580	8%	25	6.67	167	23%
Hyphal / Spore Fragments - Hyaline	8	6.67	53	<1%	20	6.67	133	2%				
Memnoniella												
Myxomycete / Rust / Smut	88	6.67	587	7%	25	6.67	167	2%	26	6.67	173	23%
Nigrospora					1	6.67	7	<1%	1	6.67	7	<1%
Oidium	8	6.67	53	<1%	4	6.67	27	<1%	1	6.67	7	<1%
Paecilomyces	3	6.67	20	<1%	6	6.67	40	<1%				
Periconia	1	6.67	7	<1%								
Pithomyces	3	6.67	20	<1%	3	6.67	20	<1%	1	6.67	7	<1%
Spegazzinia	1	6.67	7	<1%								
Stachybotrys												
Torula	3	6.67	20	<1%	21	6.67	140	2%				
TOTALS	664		8294	100%	592		6854	100%	111		741	100%
Analyst	Rebecca Lutz				Rebecca Lutz				Rebecca Lutz			
Analysis Date	4/27/2017				4/27/2017				4/27/2017			
Debris Rating	3				3				4			
Debris Composition												
Fibers	2/5				1/5				2/5			
Inorganic/Other	3/5				3/5				2/5			
Insect Parts	1/5				1/5				1/5			
Pollen	2/5				2/5				2/5			
Skin/Dander	1/5				1/5				4/5			

IAQ Mold Report

Data Detail

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

DSHS License No.: LAB0117
AIHA EMPAT ID: 102577

Client : Apex Titan, Inc. - Dallas
Project : Ethridge ES Room A-11
Project # : 725010729-073
Sample Type: Spore Trap, Non-cultured
Test Method: Mold: ASTM D7391-09 - Standard Profile

Lab Job No. : 17F-04998
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Sample Date: 04/25/2017
Spore Trap Type: Zefon - Air-O-Cell

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

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IAQ Mold Report

Analytical Notes

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

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Spore Trap Type: Zefon - Air-O-Cell

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Samples Analyzed

Sample No	1 : Exterior, Northwest
Notes:	Please note: the minimum detection limit for Cladosporium is 22 spores / cubic meter. When comparing results to other samples, use calculated results, not raw numbers. Please note: the minimum detection limit for Basidiospores is 22 spores / cubic meter. When comparing results to other samples, use calculated results, not raw numbers. Please note: the minimum detection limit for Ascospores is 9 spores / cubic meter. When comparing results to other samples, use calculated results, not raw numbers.
Sample No	2 : Exterior, East
Notes:	Please note: the minimum detection limit for Cladosporium is 33 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

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

DSHS License No.: LAB0117
AIHA EMPAT ID: 102577

Client : Apex Titan, Inc. - Dallas
Project : Ethridge ES Room A-11
Project # : 725010729-073
Sample Type: Spore Trap, Non-cultured
Test Method: Mold: ASTM D7391-09 - Standard Profile

Lab Job No. : 17F-04998
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Sample Date : 04/25/2017
Spore Trap Type: Zefon - Air-O-Cell

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Methods

Method: ASTM D7391-09. A standard spore trap reading consists of a 30% reading for small spores; 100% of the sample is read for medium and large spores. A 100% reading is provided for containment samples, upon request, or otherwise as noted. Use final spore concentrations, not raw spore counts, for interpretation of results.

Calculation: Spores/cubic meter = (Raw spore count)*(MDL)
Note: MDL (Minimum Detection Limit) is calculated based upon 1 raw spore count.
Moody Labs recommends two significant figures for calculated values based on ASTM D7391-09.

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

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Client : Apex Titan, Inc. - Dallas
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AIHA LAP, LLC
ACCREDITED LABORATORY
ENVIRONMENTAL MICROBIOLOGY
ISO/IEC 17025:2005
WWW.AIHAACCREDITEDLABS.ORG
LAB # 102577

HUB
Statewide Historically Underutilized Business Program

TEXAS Department of State Health Services
License # LAB0117

Certified WBENC Women's Business Enterprise

End of Analytical Notes section
17F-04998

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IAQ Mold Report

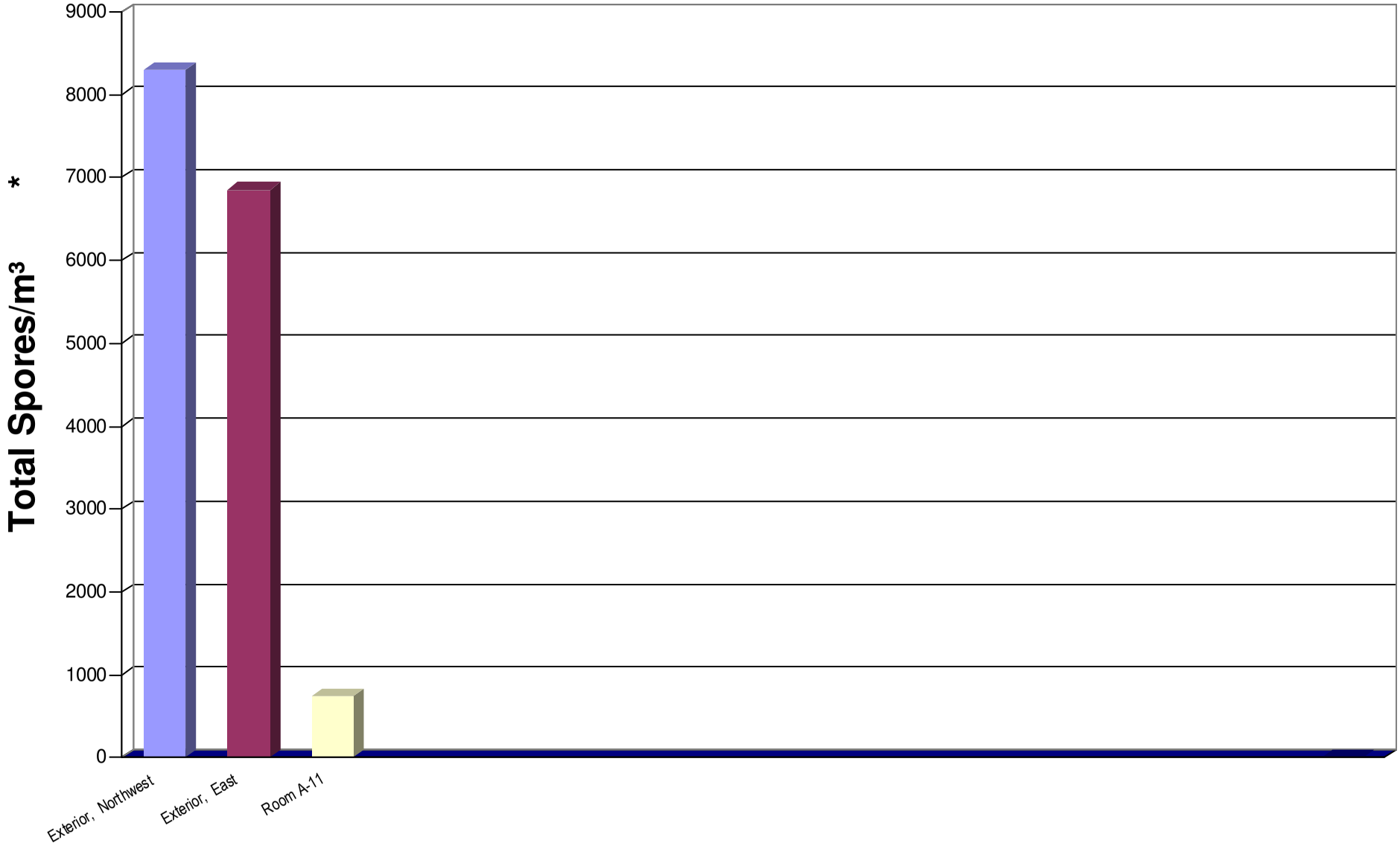
Supplemental Overview

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

DSHS License No.: LAB0117
AIHA EMPAT ID: 102577

Client : Apex Titan, Inc. - Dallas
Project : Ethridge ES Room A-11
Project # : 725010729-073

Lab Job No. 17F-04998
Report Date 04/27/2017 2:22 PM
Sample Date : 04/25/2017



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

IAQ Mold Report

Supplemental Overview

DSHS License No.: LAB0117
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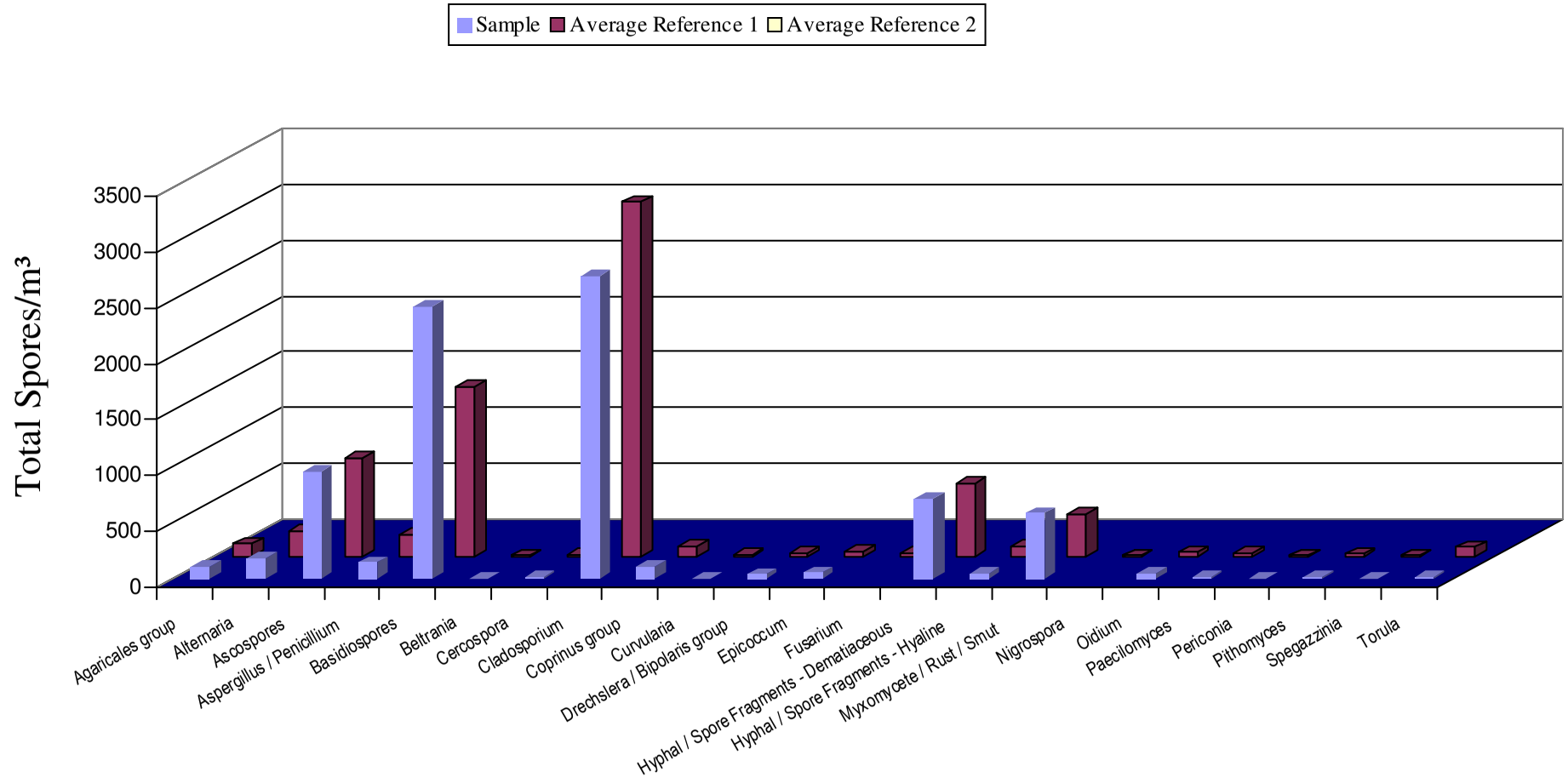
Client : Apex Titan, Inc. - Dallas
Project : Ethridge ES Room A-11
Project # : 725010729-073

Lab Job No. 17F-04998
Report Date 04/27/2017 2:22 PM
Sample Date : 04/25/2017

Exterior, Northwest



Average Reference 1 = Exterior, Northwest, Exterior, East

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

IAQ Mold Report

Supplemental Overview

DSHS License No.: LAB0117
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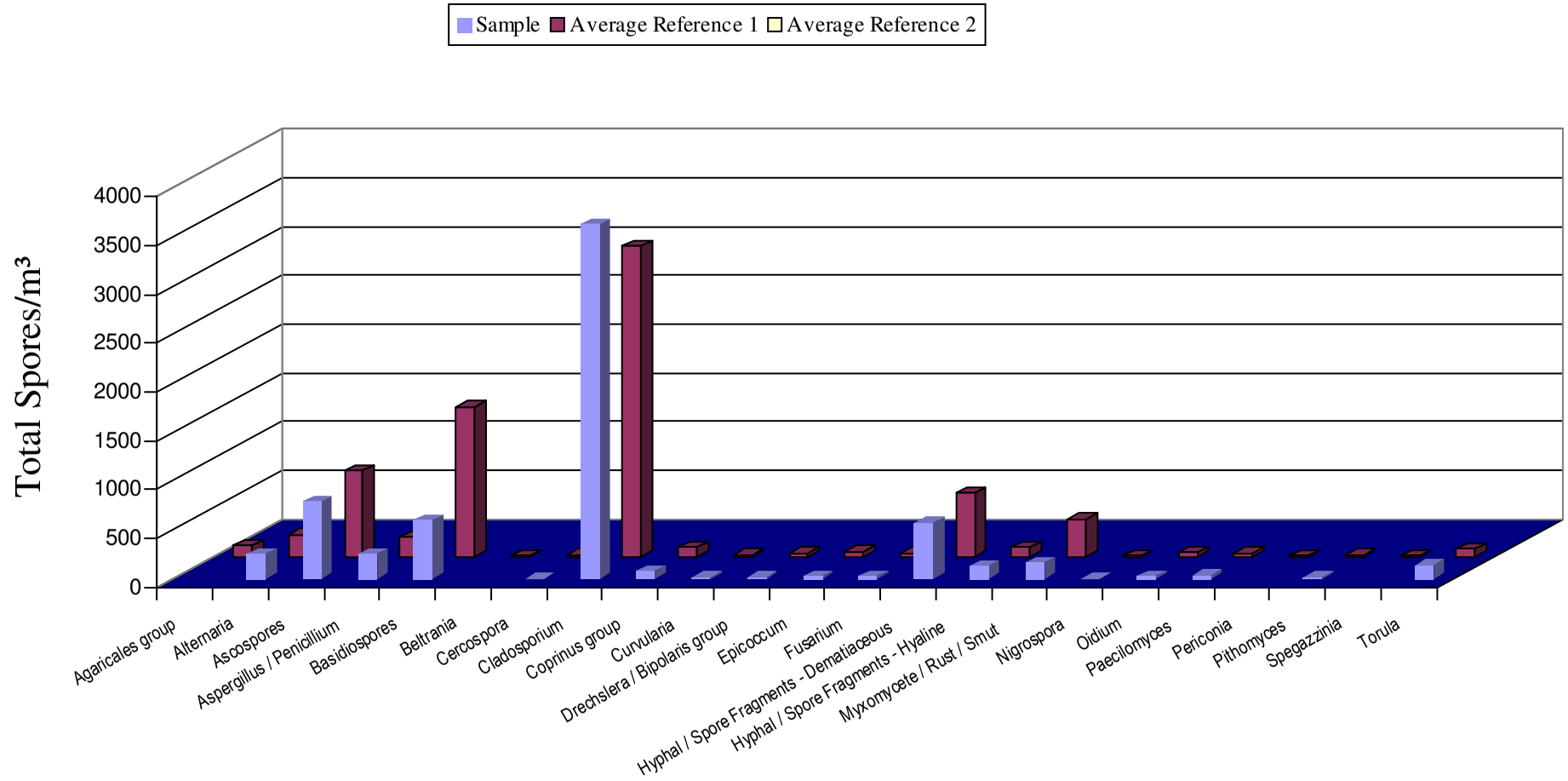
Report Date 04/27/2017 2:22 PM
Sample Date : 04/25/2017

Exterior, East



Average Reference 1 = Exterior, Northwest, Exterior, East

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IAQ Mold Report

Supplemental Overview

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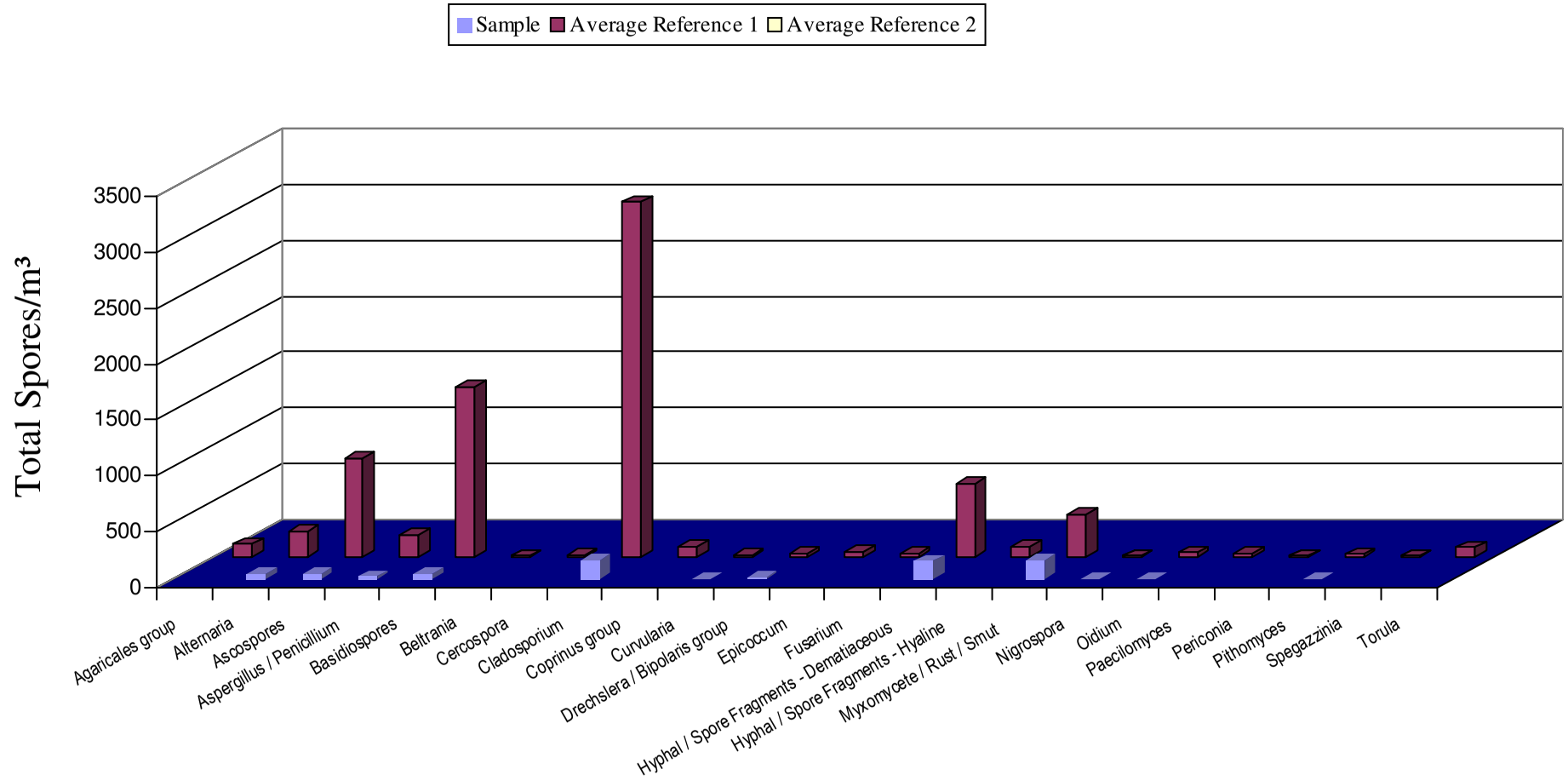
Lab Job No. 17F-04998
Report Date 04/27/2017 2:22 PM
Sample Date : 04/25/2017

Room A-11



Average Reference 1 = Exterior, Northwest, Exterior, East

End of Supplemental Overview section
17F-04998

ATTACHMENT 2

Mold Services Definitions & Limitations/Standard of Care and Reliance

APEX

Mold Services Definitions & Limitations

"Mold" defined. Mold is a general term used to describe various types of singled-celled naturally occurring biological organisms occurring worldwide. For purposes of this report the term "mold" is broadly defined to include any living or dead fungi or related products or parts, including spores, hyphae, and mycotoxins.

Limited Scope of Mold Assessment. The scope of Apex's mold assessment services as reflected in the Proposal and this report are limited in that (i) they were physically limited to certain portions of the building structure (e.g., the Client identified Investigation Areas); and (ii) limited by accessibility to building materials or components within the Investigation Area(s). In contrast to a Limited Assessment" is a comprehensive assessment, which involves destructive sampling methods and the scope of the assessment typically extending to the entire building structure.

Time sensitive. 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 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 aeroallergens. Because no limit values presently exist, Apex 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 from a limited mold assessment are limited because of the nature of the information obtained (e.g., 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). Apex cannot warrant the accuracy of prior or subsequent information/data, reports and services performed by other firms at the Site. Apex assumes no responsibility or liability for errors in information or data provided by or through the client or third party sources. Apex's services are not to be construed as legal or medical interpretation or advice.

Moisture Intrusion Limitation. Apex performs mold assessment services and is not a moisture intrusion, HVAC, roofing, plumbing or building envelope specialist. However, during the course of conducting its mold assessment services, Apex will report observed areas of apparent moisture intrusion. Apex does not and will not investigate the cause or causes of such observed moisture intrusion. In the event apparent moisture intrusion is observed, Apex 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.

Standard of Care
Apex performed its 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, expressed or implied, apply to the Services hereunder or this report.

Reliance
Apex's proposal for this project, services and this report have been prepared on behalf of and for the exclusive use of Lewisville Independent School District solely for their use and reliance in assessing the presence of mold in the Investigation Areas of the site. Lewisville Independent School District is the only party to which Apex 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, Apex 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 the proposal, the Services or this report shall be limited in the aggregate to all relying parties to the fair market value of the Services provided by Apex.