

DATE: May 15, 2015

TO: Michelle Wooten, Principal

SUBJECT: Donald ES - IAQ - Initial Contact - Room 314

On May 11, I received Work Order # 218858: <u>"Need room 314 tested for mold. Bad</u> <u>odor cc"</u> On May 13, I requested the West Zone Facility Services to replace the 5 stained ceiling tiles in Room 314 and the wet stained ceiling tile in the Library Hallway. I inspected the areas on May 14, and all the tiles had been replaced. I have submitted a P.O. request to have Room 314 Air Tested. As soon as I get the results, I will get back to you. If you have any questions, please contact me. Thanks, Paul

Paul Siddall Maintenance Energy Auditor (IAQ) Facility Services Lewisville ISD 469-446-8882



DATE: June 23, 2015

TO: Michele Wooten, Principal

SUBJECT: Donald ES - IAQ Air Test Results - Room 314

On Thursday 6/18, Apex-Titan Air tested Room 314. It is typically assumed that indoor spore levels in an area with filtered or air conditioned air, and activity levels associated with schools average 10% to 40% of the outdoor levels. Data from the airborne fungi sampling indicated that the total indoor concentration of mold/fungi in Room 314, was **3.0**% of the outdoor levels. Utilizing this theory, the indoor concentrations are well 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 469-446-8882



June 25, 2015

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

Re: Limited Mold Assessment Services Donald Elementary School Room 314 2400 Forest Vista Flower Mound, Texas LISD PO No. 91535698-00 Apex Proposal No. 7250115163

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 Donald Elementary School located at 2400 Forest Vista in Flower Mound, 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 June 18, 2015. 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 314. 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. P01151213) dated May 26, 2015. 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 June 18, 2015 by Mr. Clinton S. Jech. Apex's visual reconnaissance of the Investigation areas revealed the following:

Temperature and Relative Humidity

The temperature reading collected inside the room was reported as 87.8 degrees Fahrenheit while relative humidity was reported as 44.9 percent. Temperature readings collected outside the building ranged from 89.6 to 90.3 degrees Fahrenheit while outside relative humidity ranged from 43.5 to 45.0 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	
A	cceptable 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 rooms ranged from 7 to 15% 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 room 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 1,080 counts/m³, while the exterior level ranged from 16,614 to 35,857 counts/m³.

Three types of mold were identified at a higher concentration within the investigation area as compared to the sample collected from the exterior of the building. Air sample(s) collected within the room reported Aspergillus/Penicillium as 107 counts/m³ while exterior levels were reported as 93 counts/m³, Stachybotrys was reported as 13 counts/m³ while no exterior levels were reported. Nigrospora was reported as 7 counts/m³ while no exterior levels were reported.

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 odors or excessive dust were noted.

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.

If you have any questions regarding this report or if we can assist you with any other matter, please contact the undersigned at (214) 350-5469.

Sincerely, **Apex TITAN, Inc.**

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



Moody Labs

IAQ Mold Report

Summary

DSHS License No.: LAB0117 AIHA EMPAT ID: 102577

2051 Valley View Lane

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

Client : Apex TITAN, Inc. - Dallas, TX

Project : Donald ES, Room 314

Project # : 7250115163

Sample Type: Spore Trap, Non-cultured Test Method: Mold: ASTM D7391-09 - Standard Profile Lab Job No. 15F-07761

Report Date 06/22/2015 1:43 PM

Sample Date : 06/18/2015

Spore Trap Type: Zefon - Air-O-Cell

Page 1 of 3

On 6/18/2015, three (3) samples were submitted by Clint Jech of Apex TITAN, Inc. - Dallas, TX (located at 2351 W. NW Highway #3321, 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		ntration
1	75	Exterior, East * See Analytical Notes report for further details	Cladosporium Basidiospores Ascospores Coprinus group Myxomycete / Rust / Smut Alternaria Hyphal / Spore Fragments Cercospora Pyricularia Ganoderma Agaricales group Aspergillus / Penicillium Drechslera / Bipolaris group Epicoccum Pithomyces Fusarium Fusicladium Total:	7334 7200 653 333 240 240 213 120 40 40 40 40 40 27 27 27 27 13 16614	44% 43% 4% 2% 1% 1% <1% <1% <1% <1% <1% <1%

Moody Labs

IAQ Mold Report

Summary

DSHS License No.: LAB0117 AIHA EMPAT ID: 102577

2051 Valley View Lane

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

Client : Apex TITAN, Inc. - Dallas, TX

Project : Donald ES, Room 314

7250115163 Project # :

Sample Type: Spore Trap, Non-cultured

Lab Job No. 15F-07761 **Report Date** 06/22/2015 1:43 PM

Sample Date : 06/18/2015

Spore Trap Type: Zefon - Air-O-Cell

Test Method: Mold: ASTM D7391-09 - Standard Profile

Page 2 of 3

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Sample Number	Volume (liters)	Sample Description	Identification		ntration ubic meter
2	75	Exterior, South * See Analytical Notes report for further details	Basidiospores Cladosporium Ascospores Myxomycete / Rust / Smut Hyphal / Spore Fragments Agaricales group Alternaria Coprinus group Cercospora Drechslera / Bipolaris group Aspergillus / Penicillium Pyricularia Curvularia Epicoccum Fusarium Total	21999 10100 1213 733 453 333 307 280 120 93 93 53 40 27 13 : 35857	61% 28% 3% 2% 1% <1% <1% <1% <1% <1% <1%

Moody Labs

IAQ Mold Report

Summary

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Sample Number	Volume (liters)	Sample Description	Identification		ntration ibic meter
3	150	Room 314	Basidiospores	320	30%
_			Myxomycete / Rust / Smut	293	27%
			Hyphal / Spore Fragments	180	17%
			Aspergillus / Penicillium	107	10%
			Ascospores	53	5%
			Drechslera / Bipolaris group	40	4%
			Pithomyces	20	2%
			Cladosporium	20	2%
			Stachybotrys	13	1%
			Curvularia	13	1%
			Nigrospora	7	<1%
			Coprinus group	7	<1%
			Fusarium	7	<1%
			Total:	1080	100%
Dec le ser est					
		II. Data contained in this test report relates only to t on should be made by a qualified professional.	he samples tested. This report does not express or imply interpretati	on of	
		or the manner in which these samples were collected ations of personnel performing sampling and/or into	l or handled prior to being received at this laboratory. Moody Labs erpretations of this data.		
Analyst(s): Reb	ecca Lutz		M.H.L	÷	
Lab Manager : H	eather Lo	pez	Approved Signatory: Acathe Le	2	

Lab Director : Bruce Crabb

Approved Signatory : Thank you for choosing Moody Labs	Remo	hell
Thank you for choosing Moody Labs	_ Lonne	<u></u>

Moo	dy L	abs
-		10

IAQ Mold Report

Data Detail

2051 Valley View Lane

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

Client : Apex TITAN, Inc. - Dallas, TX

Project : Donald ES, Room 314

Project # : 7250115163

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Report Date : 06/22/2015 1:43 PM

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Spore Trap Type: Zefon - Air-O-Cell

Test Method: Mold: ASTM D7391-09 - Standard Profile

Page 1 of 1

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.

1	5				2				2	1	1	
Sample ID:			1				2				3	
Location:		Exter	ior, East			Exter	ior, South			Ro	om 314	
Media Expires On:		Ма	ar 2016			Ма	ar 2016			Ма	ar 2016	
Notes Included:	S	ee Ana	lytical Notes	S	S	ee Ana	alytical Note:	S				
Volume:			75				75				150	
	raw ct.	MDL	spores/m ³		raw ct.	MDL	spores/m ³		raw ct.	MDL	spores/m ³	
Agaricales group	3	13.33	40	<1%	25			<1%				
Alternaria	18	13.33	240	1%	23	13.33	307	<1%				
Ascospores	49	13.33	653	4%	91	13.33	1213	3%	8	6.67	53	5%
Aspergillus / Penicillium	3	13.33	40	<1%	7	13.33	93		16	6.67	107	10%
Basidiospores	108	66.67	7200	43%	165	133.33	21999	61%	48	6.67	320	30%
Cercospora	9	13.33	120	<1%	9	13.33	120	<1%				
Chaetomium												
Cladosporium	110	66.67	7334	44%	101	100.00	10100	28%	3	6.67	20	2%
Coprinus group	25	13.33	333	2%	21	13.33	280	<1%	1	6.67	7	<1%
Curvularia					3	13.33	40	<1%	2	6.67	13	1%
Drechslera / Bipolaris group	2	13.33	27	<1%	7	13.33	93	<1%	6	6.67	40	4%
Epicoccum	2	13.33	27	<1%	2	13.33	27	<1%				
Fusarium	2	13.33	27	<1%	1	13.33	13	<1%	1	6.67	7	<1%
Fusicladium	1	13.33	13	<1%								
Ganoderma	3	13.33	40	<1%								
Hyphal / Spore Fragments	16	13.33	213	1%	34	13.33	453	1%	27	6.67	180	17%
Memnoniella												
Myxomycete / Rust / Smut	18	13.33	240	1%	55	13.33	733	2%	44	6.67	293	27%
Nigrospora									1	6.67	7	<1%
Pithomyces	2	13.33	27	<1%					3	6.67	20	2%
Pyricularia	3	13.33	40	<1%	4	13.33	53	<1%				
Stachybotrys									2	6.67	13	1%
TOTALS	374		16614	100%	548		35857	100%	162		1080	100%
Analyst		Rebe	ecca Lutz			Rebe	ecca Lutz			Rebe	ecca Lutz	
Analysis Date		6/2	2/2015			6/2	2/2015			6/2	2/2015	
Debris Rating			2				3				4	
Debris Composition												
Fibers			1/5				2/5				2/5	
Inorganic/Other			2/5				3/5				4/5	
Insect Parts			0/5				1/5				0/5	
Pollen			0/5				1/5				1/5	
Skin/Dander			1/5				1/5				4/5	

	Moodul	IAQ Mo	old Report
Farmers Branch, TX 75234 Phone: (972) 241-8460 Client : Apex TITAN, Inc Dallas, TX Lab Job No. : 15F-07761 Project : Donald ES, Room 314 Report Date : 06/22/2015 1:43 PM Project #: 7250115163 Sample Date : 06/18/2015 Sample Date : 06/18/2015 Sample Type: Spore Trap, Non-cultured Spore Trap Type: Zefon - Air-O-Cell Page 1 of 2 Test Method: Mold: ASTM D7391-09 - Standard Profile Page 1 of 2 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 : Exterior, East Notes: Due to a high presence of Cladosporium, the Minimum Detection Limit is 67 spores / cubic meter for this fungal group. When comparing results to other samples, use calculated results, not raw numbers. Due to a high presence of Basidiospores, the Minimum Detection Limit is 133 spores / cubic meter for this fungal group. When comparing results to other samples, use calculated results, not raw numbers. Due to a high presence of Cladosporium, the Minimum Detection Limit is 100 spores / cubic meter for this fungal group. When comparing results to other samples, use calculated results, not raw numbers. Due to a high presence of Cladosporium, the Minimum Detection Limit is 100 spores / cubic meter for this fungal group. When comparing results to other samples, use calculated results, not raw numbers. Due to a high presence of Cladosporium, the Minimum Detection Limit is 100 spore	MODUY L	Analyt	ical Notes DSHS License No.: LAB011
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Samples Analyzed Sample No: 1 : Exterior, East Notes: Due to a high presence of Cladosporium, the Minimum Detection Limit is 67 spores / cubic meter for this fungal group. When comparing results to other samples, use calculated results, not raw numbers. Due to a high presence of Basidiospores, the Minimum Detection Limit is 67 spores / cubic meter for this fungal group. When comparing results to other samples, use calculated results, not raw numbers. Sample No: 2 : Exterior, South Notes: Due to a high presence of Basidiospores, the Minimum Detection Limit is 133 spores / cubic meter for this fungal group. When comparing results to other samples, use calculated results, not raw numbers. Due to a high presence of Cladosporium, the Minimum Detection Limit is 100 spores / cubic meter for this fungal group. When comparing results to other samples, use calculated results, not raw numbers. Due to a high presence of Cladosporium, the Minimum Detection Limit is 100 spores / cubic meter for this fungal group. When comparing results to other samples, use calculated results, not raw numbers. Due to a high presence of Cladosporium, the Minimum Detection Limit is 100 spores / cubic meter for this fungal group. 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.			6
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Moody L 2051 Valley V Farmers Branc		IAQ Mold Report Analytical Notes	DSHS License No.: LAB0117 AIHA EMPAT ID: 102577
Client : Project : Project # :	Apex TITAN, Inc Dallas, TX Donald ES, Room 314 7250115163	Report I Sample	No. : 15F-07761 Date : 06/22/2015 1:43 PM Date : 06/18/2015
Test Method:	Spore Trap, Non-cultured Mold: ASTM D7391-09 - Standard P s of three sections; a summary section, a data de		Page 2 of 3

Methods

Method: ASTM D7391-09: Categorization and Quantification of Airborne Fungal Structures in an Inertial Impaction Sample by Optical Microscopy.

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.

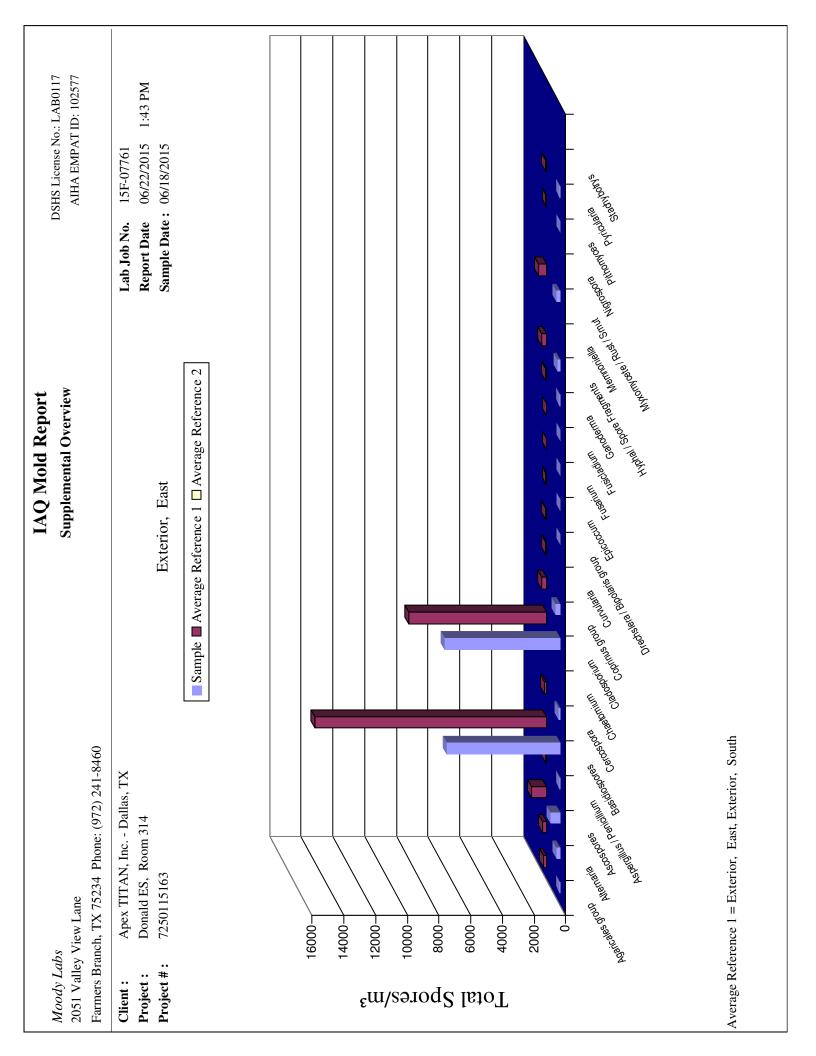
Debris Rating Key

- 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

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

	IAQ Mold Report	
Moody Labs	Analytical Notes	DSHS License No.: LAB0117
2051 Valley View Lane		AIHA EMPAT ID: 102577
Farmers Branch, TX 75234 Phone: (972) 241-8460)	
Client : Apex TITAN, Inc Dallas, TX	L	ab Job No. : 15F-07761
Project : Donald ES, Room 314	R	eport Date : 06/22/2015 1:43 PM
Project # : 7250115163		ample Date : 06/18/2015
Sample Type: Spore Trap, Non-cultured		e: Zefon - Air-O-Cell
Test Method: Mold: ASTM D7391-09 - Standard		Page 3 of 3
This report consists of three sections; a summary section, a data	detail section, and an analytical notes sec	ction. Results may not be reported except in full.
	AIHA LAP, LLC CCREDITED LABORATORY ENVIRONMENTAL MICROBIOLOGY ISOIIEC 17025:2005 WWW.AIHAACCREDITEDLABS.ORG LAB # 102577	Certified WOMEN's Business Enterprise

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 Moody Labs
 2051 Valley View Ln.
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 Fax (972) 241-8461

 www.moodylabs.com
 Q-00134s-2015

ATTACHMENT 2

Mold Services Definitions & Limitations/Standard of Care and Reliance





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.

