

**DATE:** February 5, 2015

**TO:** Barbara Hamric, Principal

**SUBJECT:** Hedrick MS - IAQ - Initial Contact report - Room 3115

On Monday 2/2, Juan Lopez, from the IPM department, told me that the teacher in Room 3115 reported a bad smell in her room. This morning 2/5, at 6:30 AM, I inspected the room. There was no noticeable bad smell and no water intrusions. I have submitted a P.O. request, to Air Test the room. The test will be done on a day when it is above 60 degrees in the afternoon and not raining. As soon as I get the test results, I will E-mail them 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:** February 26, 2015

**TO:** Barbara Hamric, Principal

**SUBJECT:** Hedrick MS - IAQ - Results report - Room C-3115

On Friday 2/20, Apex-Titan Air tested Room C-3115. 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 C-3115, was **26.4%** 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  
469-446-8882



February 25, 2015

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

Re: Limited Mold Assessment Services  
Hedrick Middle School  
Room C-3115  
1526 Bellaire Boulevard  
Lewisville, Texas  
LISD PO No. 91521112-00  
Apex Project No. 7250115042

### **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 Hedrick Middle School located at 1526 Bellaire Boulevard in Lewisville, 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 February 20, 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 C-3115. 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. P01151061) dated February 5, 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 February 20, 2015 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 73.0 degrees Fahrenheit while relative humidity was reported as 44.6 percent. Temperature readings collected outside the building ranged from 69.2 to 70.3 degrees Fahrenheit while outside relative humidity ranged from 50.1 to 51.1 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 8 to 10% 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, Inc. (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 were 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 447 counts/m<sup>3</sup>, while the exterior level ranged from 784 to 1,694 counts/m<sup>3</sup>.

One type of mold was 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 classroom C-3115 reported *Alternaria* as 33 counts/m<sup>3</sup> while exterior levels were reported at 13 counts/m<sup>3</sup>.

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



# 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

**Lab Job No.** 15F-02039

**Project :** Hedrick MS Room C-3115

**Report Date** 02/24/2015 12:48 PM

**Project # :** 7250115042.001

**Sample Date :** 02/20/2015

**Sample Type:** Spore Trap, Non-cultured

**Spore Trap Type:** Zefon - Air-O-Cell

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

Page 1 of 2

On 2/20/2015, 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	Concentration spores/cubic meter
1	75	Exterior, East	Cladosporium	507 30%
			Hyphal / Spore Fragments	427 25%
			Basidiospores	320 19%
			Myxomycete / Rust / Smut	187 11%
			Ascospores	120 7%
			Aspergillus / Penicillium	80 5%
			Drechslera / Bipolaris group	27 2%
			Agaricales group	13 <1%
			Alternaria	13 <1%
2	75	Exterior, Southeast	Basidiospores	213 27%
			Aspergillus / Penicillium	173 22%
			Cladosporium	107 14%
			Hyphal / Spore Fragments	93 12%
			Oidium	53 7%
			Epicoccum	53 7%
			Ascospores	53 7%
			Nigrospora	13 2%
			Myxomycete / Rust / Smut	13 2%
			Chaetomium	13 2%
			Total:	784 100%







# IAQ Mold Report

## Data Detail

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

**Lab Job No. :** 15F-02039

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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.

Sample ID:	1				2				3			
Location:	Exterior, East				Exterior, Southeast				Room C-3115			
Media Expires On:	Oct 2015				Oct 2015				Oct 2015			
Notes Included:												
Volume:	75				75				150			
	raw ct.	MDL	spores/m <sup>3</sup>		raw ct.	MDL	spores/m <sup>3</sup>		raw ct.	MDL	spores/m <sup>3</sup>	
Agaricales group	1	13.33	13	<1%								
Alternaria	1	13.33	13	<1%					5	6.67	33	7%
Ascospores	9	13.33	120	7%	4	13.33	53	7%	2	6.67	13	3%
Aspergillus / Penicillium	6	13.33	80	5%	13	13.33	173	22%	7	6.67	47	11%
Basidiospores	24	13.33	320	19%	16	13.33	213	27%	25	6.67	167	37%
Chaetomium					1	13.33	13	2%				
Cladosporium	38	13.33	507	30%	8	13.33	107	14%	4	6.67	27	6%
Drechslera / Bipolaris group	2	13.33	27	2%					4	6.67	27	6%
Epicoccum					4	13.33	53	7%				
Hyphal / Spore Fragments	32	13.33	427	25%	7	13.33	93	12%	17	6.67	113	25%
Memnoniella												
Myxomycete / Rust / Smut	14	13.33	187	11%	1	13.33	13	2%	3	6.67	20	4%
Nigrospora					1	13.33	13	2%				
Oidium					4	13.33	53	7%				
Stachybotrys												
<b>TOTALS</b>	127		1694	100%	59		784	100%	67		447	100%
Analyst	Rebecca Lutz				Rebecca Lutz				Rebecca Lutz			
Analysis Date	2/24/2015				2/24/2015				2/24/2015			
Debris Rating	3				3				4			
Debris Composition												
Fibers	2/5				2/5				3/5			
Inorganic/Other	3/5				3/5				4/5			
Insect Parts	1/5				1/5				0/5			
Pollen	2/5				3/5				1/5			
Skin/Dander	1/5				1/5				3/5			

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# IAQ Mold Report

## Analytical Notes

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

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**Project :** Hedrick MS Room C-3115

**Report Date :** 02/24/2015 12:48 PM

**Project # :** 7250115042.001

**Sample Date :** 02/20/2015

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**Spore Trap Type:** Zefon - Air-O-Cell

**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.

**NOTE: No abnormalities or exceptions noted during analysis. All samples suitable for analysis.**

**NOTE: No discernable field blanks were included with this sample set.**

### 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.

Steve Moody Micro Services 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 debris detected.

1 - Trace debris.

2 - Light debris.

3 - Moderate debris.

4 - Substantial debris.

5 - Extensive debris.

6 - Field blank.

10 - Hold Sample

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



# IAQ Mold Report

## Analytical Notes

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AIHA EMPAT ID: 102577

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

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Page 2 of 2

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LAB # 102577



# IAQ Mold Report

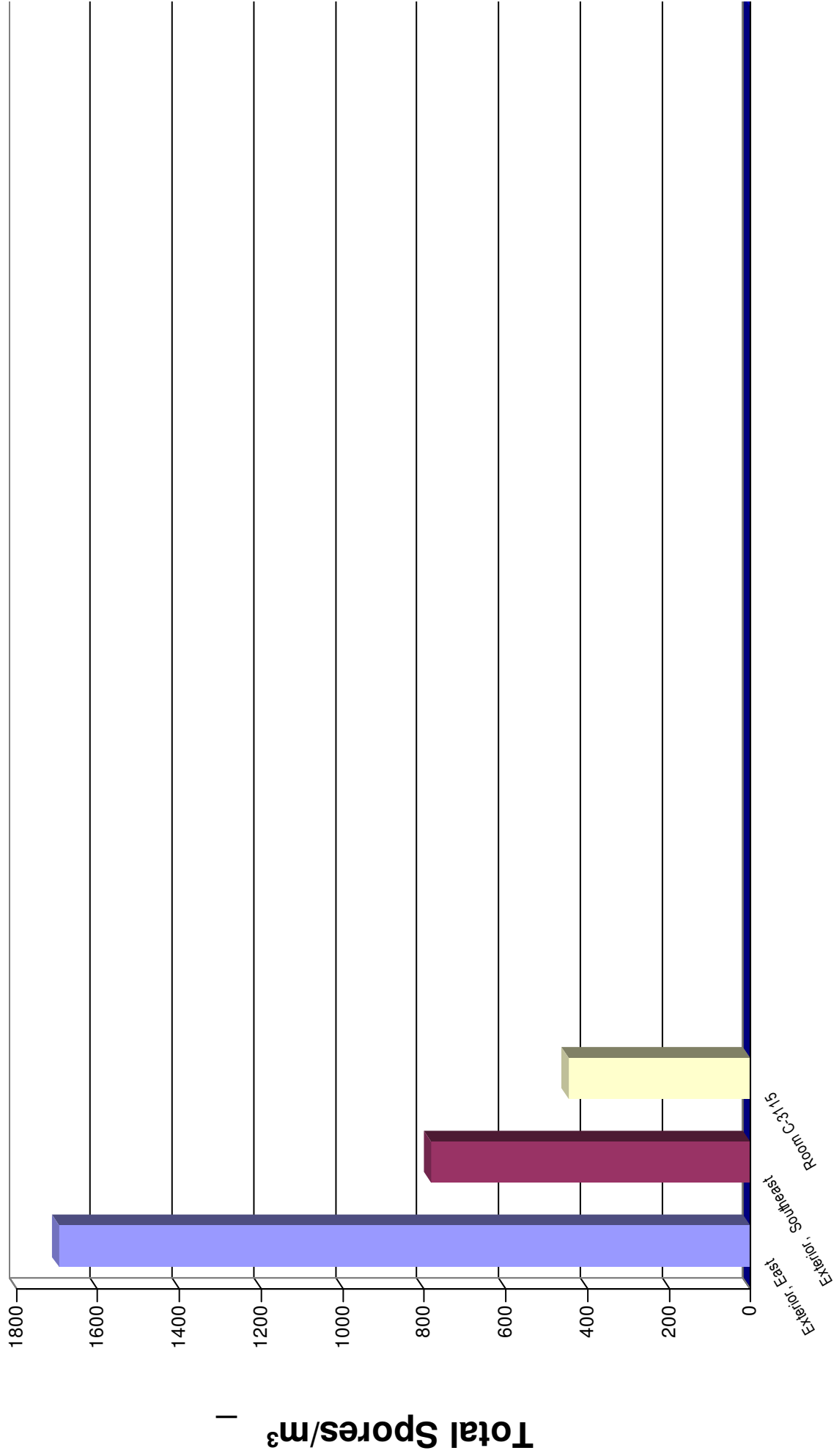
## Supplemental Overview

DSHS License No.: LAB0117  
AIHA EMPAT ID: 102577

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

**Client :** Apex TITAN, Inc. - Dallas, TX  
**Project :** Hedrick MS Room C-3115  
**Project # :** 7250115042.001

**Lab Job No.** 15F-02039  
**Report Date** 02/24/2015 12:48 PM  
**Sample Date :** 02/20/2015



# IAQ Mold Report

## Supplemental Overview

DSHS License No.: LAB0117  
 AIHA EMPAT ID: 102577

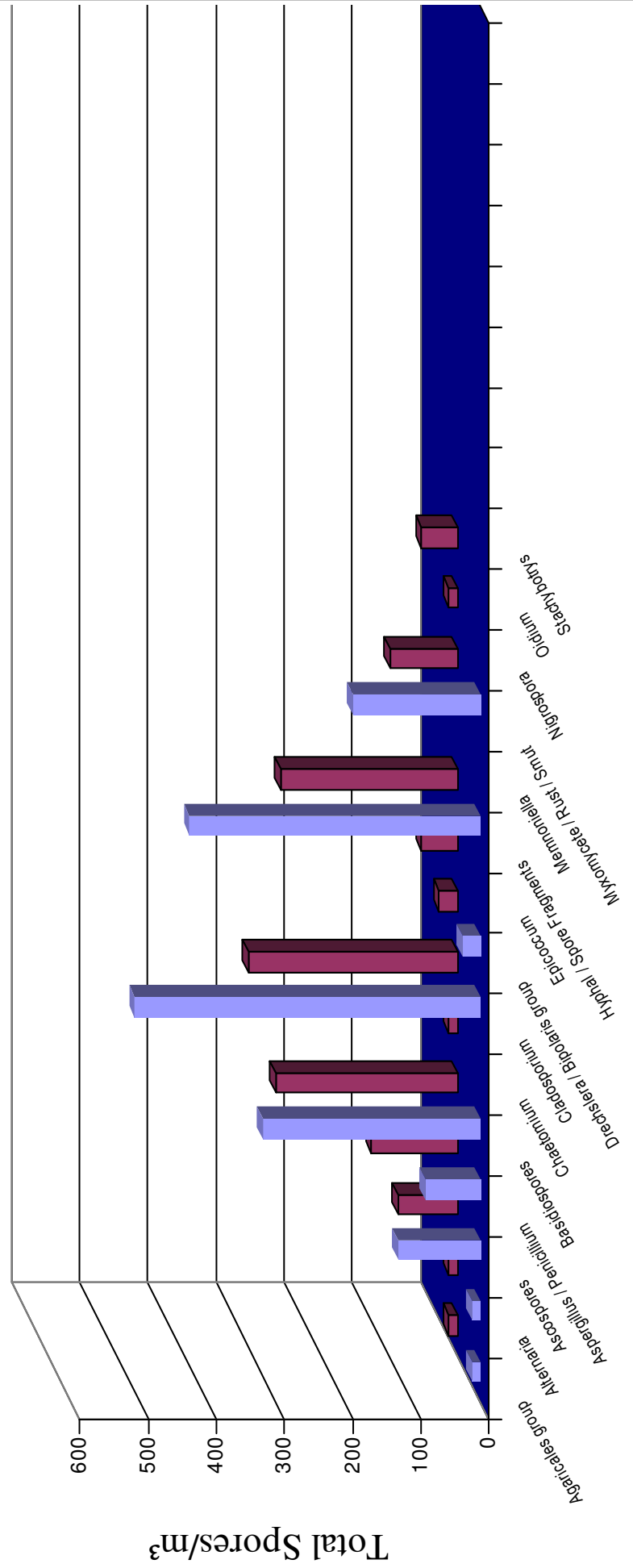
**Moody Labs**  
 2051 Valley View Lane  
 Farmers Branch, TX 75234 Phone: (972) 241-8460

**Lab Job No.** 15F-02039  
**Report Date** 02/24/2015 12:48 PM  
**Sample Date** : 02/20/2015

**Client :** Apex TITAN, Inc. - Dallas, TX  
**Project :** Hedrick MS Room C-3115  
**Project # :** 7250115042.001

Exterior, East

■ Sample 
 ■ Average Reference 1 
 ■ Average Reference 2



Average Reference 1 = Exterior, East, Exterior, Southeast

# IAQ Mold Report

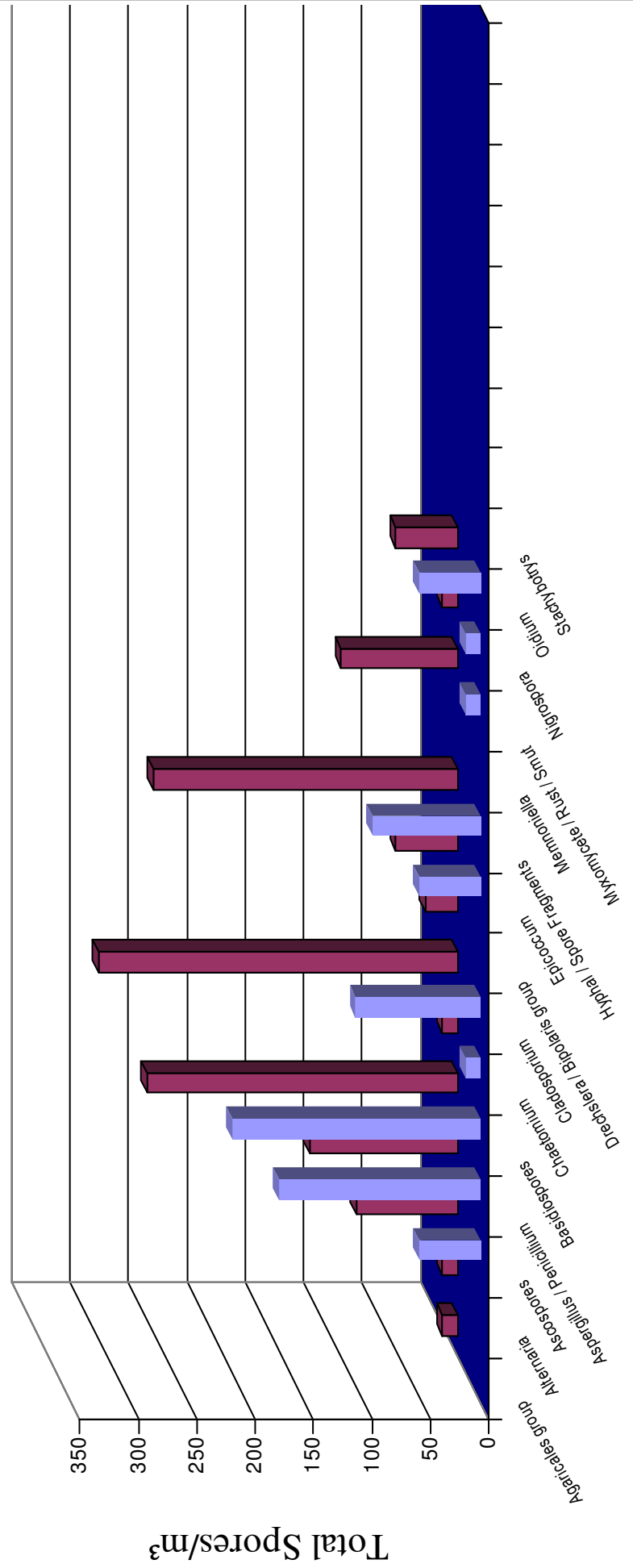
## Supplemental Overview

**Client :** Apex TITAN, Inc. - Dallas, TX  
**Project :** Hedrick MS Room C-3115  
**Project # :** 7250115042.001

**Lab Job No.** 15F-02039  
**Report Date** 02/24/2015 12:48 PM  
**Sample Date :** 02/20/2015

Exterior, Southeast

■ Sample ■ Average Reference 1 ■ Average Reference 2



Average Reference 1 = Exterior, East, Exterior, Southeast

# IAQ Mold Report

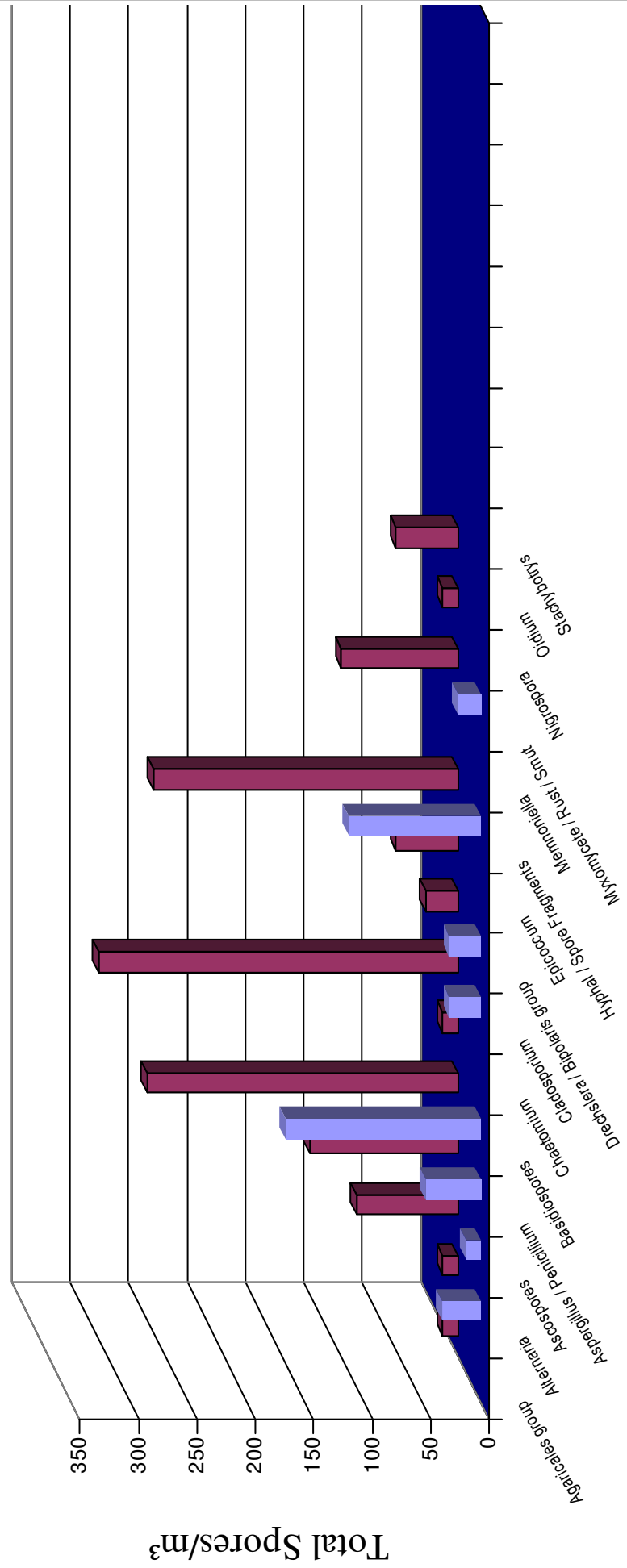
## Supplemental Overview

**Client :** Apex TITAN, Inc. - Dallas, TX  
**Project :** Hedrick MS Room C-3115  
**Project # :** 7250115042.001

**Lab Job No.** 15F-02039  
**Report Date** 02/24/2015 12:48 PM  
**Sample Date :** 02/20/2015

Room C-3115

Legend: ■ Sample ■ Average Reference 1 ■ Average Reference 2



Average Reference 1 = Exterior, East, Exterior, Southeast





## **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.