

Southwest GEOSCIENCE

2351 W. Northwest Hwy., Suite 3321
Dallas, Texas 75220
Ph: (214) 350-5469
Fax: (214) 350-2914

March 29, 2013

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

Re: Limited Mold Assessment Services
Highland Village Elementary School
Room 3B
301 Brazos Boulevard
Highland Village, Texas.
SWG Project No. 0113004

Introduction

Southwest Geoscience (SWG) conducted limited mold assessment activities for the Lewisville Independent School District (Lewisville I.S.D.) within Highland Village Elementary School located at 301 Brazos Boulevard in Highland Village, 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 (License #MAT1075), on March 26, 2013. SWG'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 3B. SWG'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 SWG's mold assessment or this report at this time.

Scope of Work

As set forth in SWG's Mold Assessment Proposal (No. 01131015) dated January 10, 2013, SWG's scope-of-work was to provide visual and/or analytical mold assessment and related services in the Investigation Areas which included:

Visual Reconnaissance: SWG 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. SWG's visual reconnaissance only included readily accessible or visible portions of the Investigation Areas.

Suspect Mold Growth Sampling and Analysis: SWG 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

SWG's Mold Assessment Site reconnaissance was performed on March 26, 2013 by Mr. Clinton S. Jech. SWG's visual reconnaissance of the Investigation areas revealed the following:

Temperature and Relative Humidity

Temperature readings collected inside the room was 68.7 degrees Fahrenheit while relative humidity was 29.2 percent. Temperature readings collected outside the building ranged from 66.5 to 68.0 degrees Fahrenheit while outside relative humidity ranged from 22.9 to 21.0 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/work place 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

SWG 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 were reported as 6-10% which is considered normal by the manufacturer.

Air Monitoring Results

SWG collected one (1) sample from the interior of the room 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 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. Total fungal spore concentration within the investigation area was reported as 1,480 counts/m³ while the exterior level ranged from 3,240 to 6,720 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 Basidiospores as 260 counts/m³ inside the room while exterior levels range from 120 to 200 counts/m³. Curvularia was reported as 20 counts/m³ while no exterior levels were reported. Pithomyces was reported as 20 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

SWG observed no visible mold during the assessment. No odors or excessive dust were noted.

Conclusions and Recommendations

Based on SWG's limited assessment and the analytical results, it appears that the indoor air quality, as it relates to airborne fungi, was within recommended guidelines. 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,
Southwest Geoscience



Darren G. Bowden
Corporate Director
Industrial Hygiene Services
Texas Mold Assessment Consultant
Lic. No. MAC0321

Attachments: Analytical Results/Chain of Custody
Mold Services Definitions & Limitations/Standard of Care and Reliance

Analytical Results/Chain of Custody

IAQ Mold Report

Steve Moody Micro Services, LLC

2051 Valley View Lane

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

Summary

DSHS License No.: LAB0117

AIHA EMPAT ID: 102577

Client : Southwest Geoscience - Dallas, TX

Lab Job No. 13F-03377

Project : Highland Village, Room 3B

Report Date 03/29/2013 12:28 PM

Project # : 0113004

Sample Date : 03/26/2013

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 3/28/2013, three (3) samples were submitted by Clint Jech of Southwest Geoscience - Dallas, TX (located at 2351 W NW Hwy #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, North * See Analytical Notes report for further details	Agaricus / Agrocybe	40
			Alternaria	200
			Ascospores	40
			Aspergillus / Penicillium	1880
			Basidiospores	120
			Chaetomium	40
			Cladosporium	2000
			Coprinus	40
			Drechslera / Bipolaris group	200
			Hyphal / Spore Fragments	1400
			Myxomycete / Periconia / Rust / Smut	480
			Non-specified Fungal Spore(s)	240
			Torula	40
			Total:	6720
2	75	Exterior, Northwest * See Analytical Notes report for further details	Alternaria	80
			Ascospores	120
			Aspergillus / Penicillium	280
			Basidiospores	200
			Cladosporium	1800
			Epicoccum	40
			Hyphal / Spore Fragments	160
			Myxomycete / Periconia / Rust / Smut	280
			Non-specified Fungal Spore(s)	240
			Oidium / Peronospora	40
			Total:	3240

IAQ Mold Report

Steve Moody Micro Services, LLC
 2051 Valley View Lane
 Farmers Branch, TX 75234 Phone: (972) 241-8460

Summary

DSHS License No.: LAB0117
 AIHA EMPAT ID: 102577

Client : Southwest Geoscience - Dallas, TX **Lab Job No.** 13F-03377
Project : Highland Village, Room 3B **Report Date** 03/29/2013 12:28 PM
Project # : 0113004 **Sample Date :** 03/26/2013
Sample Type: Spore Trap, Non-cultured **Spore Trap Type:** Zefon - Air-O-Cell
Test Method: Mold: ASTM D7391-09 - Standard Profile Page 2 of 2

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Sample Number	Volume (liters)	Sample Description	Identification	Concentration spores/cubic meter
3	150	Room 3B * See Analytical Notes report for further details	Alternaria Aspergillus / Penicillium Basidiospores Cladosporium Curvularia Drechslera / Bipolaris group Hyphal / Spore Fragments Myxomycete / Periconia / Rust / Smut Non-specified Fungal Spore(s) Pithomyces <div style="text-align: right;">Total:</div>	140 180 260 180 20 40 440 140 60 20 1480

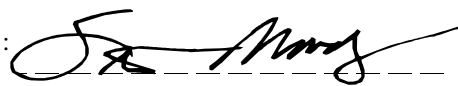
Results may not be reported except in full. Data contained in this test report relates only to the samples tested. This report does not express or imply interpretation of the results contained herein. Interpretation should be made by a qualified professional.

Steve Moody Micro Services assumes no responsibility for the manner in which these samples were collected or handled prior to being received at this laboratory. SMMS assumes no responsibility for the qualifications of personnel performing sampling and/or interpretations of this data.

Analyst(s): Rebecca Lutz

Lab Director: Steve Moody

Approved Signatory :



Thank you for choosing Steve Moody Micro Services

IAQ Mold Report

Steve Moody Micro Services, LLC
 2051 Valley View Lane
 Farmers Branch, TX 75234 Phone: (972) 241-8460

Data Detail

DSHS License No.: LAB0117
 AIHA EMPAT ID: 102577

Client : Southwest Geoscience - Dallas, TX **Lab Job No. :** 13F-03377
Project : Highland Village, Room 3B **Report Date :** 03/29/2013 12:28 PM
Project # : 0113004 **Sample Date :** 03/26/2013
Sample Type: Spore Trap, Non-cultured **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.

Sample ID:	1			2			3					
Location:	Exterior, North			Exterior, Northwest			Room 3B					
Debris Rating:	5			5			5					
Media Expires On:	Jul 2013			Jul 2013			Jul 2013					
Notes Included?:												
Volume:	75			75			150					
	raw ct.	MDL	spores/m ³	raw ct.	MDL	spores/m ³	raw ct.	MDL	spores/m ³			
Agaricus / Agrocybe	1	40.00	40									
Alternaria	5	40.00	200	2	40.00	80	7	20.00	140			
Ascospores	1	40.00	40	3	40.00	120						
Aspergillus / Penicillium	47	40.00	1880	7	40.00	280	9	20.00	180			
Basidiospores	3	40.00	120	5	40.00	200	13	20.00	260			
Chaetomium	1	40.00	40									
Cladosporium	50	40.00	2000	45	40.00	1800	9	20.00	180			
Coprinus	1	40.00	40									
Curvularia							1	20.00	20			
Drechslera / Bipolaris group	5	40.00	200				2	20.00	40			
Epicoccum				1	40.00	40						
Hyphal / Spore Fragments	35	40.00	1400	4	40.00	160	22	20.00	440			
Memnoniella												
Myxomycete / Periconia / Rust / Smut	12	40.00	480	7	40.00	280	7	20.00	140			
Non-specified Fungal Spore(s)	6	40.00	240	6	40.00	240	3	20.00	60			
Oidium / Peronospora				1	40.00	40						
Pithomyces							1	20.00	20			
Stachybotrys												
Torula	1	40.00	40									
TOTALS	168		6720	81		3240	74		1480			
Analyst	Rebecca Lutz			Rebecca Lutz			Rebecca Lutz					
Analysis Date	3/29/2013			3/29/2013			3/29/2013					

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.

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

IAQ Mold Report

Steve Moody Micro Services, LLC
2051 Valley View Lane
Farmers Branch, TX 75234 Phone: (972) 241-8460

Analytical Notes

DSHS License No.: LAB0117
AIHA EMPAT ID: 102577

Client : Southwest Geoscience - Dallas, TX

Lab Job No. : 13F-03377

Project : Highland Village, Room 3B

Report Date : 03/29/2013 12:28 PM

Project # : 0113004

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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.

Samples Analyzed

Sample No: 1 : Exterior, North

Notes: 40% Occluded.

Sample No: 2 : Exterior, Northwest

Notes: 20% Occluded.

Sample No: 3 : Room 3B

Notes: 30% Occluded.

Field Blanks

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

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.



LAB # 102577

Chain of Custody

Page 1 of 1



Lab Job # 13F03377 AOC3
 Lab Job # _____
 Lab Job # _____

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

Turnaround of Culture Samples subject to Culture Growth

ASBESTOS PLM

Bulk 1 day 2 day 3 day 5 day Immediate
 Analyze All Positive Stop

PCM Air (7400) 1 day 2 day 3 day 5 day Immediate
TOTAL DUST (0500/0600) 1 day 2 day

MOLD

Non-culture (Tape / Bulk / Air) 1 day 2 day Immediate
 Air Standard Profile Air Expanded Profile
 Analyze Blanks Yes No
 Culture (Swab / Bulk / Plate) 7-14 day

OTHER: _____

ASBESTOS TEM

Air AHERA Method 6 hr 12hr 24 hr
 Air 7402 (Modified) 1 day 2 day 3 day
 Bulk/Wipe/Micro Vac 1 day 2 day 3 day
 Water 1 day 2 day 3 day
 Analyze Blanks Yes No

BACTERIA

Heterotrophic Plate Count (HPC) 3 day
 HPC + Gram Stain 3 day 5 day
 HPC + 3 Gram Neg ID 6-8 day
 HPC + 5 Gram Neg ID 6-8 day
 Fecal Coliform (MPN) 3 day
 Total Coliform & E Coli (P/A) 2-3 day

Billing Company / City: SWG # of Samples: 3
 Submitter's Company: _____ Sample Date: 3/26/2013
 Submitter's Name: Clinton S. Jech Project #: 0113004
 Project: Highland Village Room 3B Phone #: _____
 Contact Information: Name: Clinton Jech Mobile #: (972) 989-1031
 E-mail Results to: Clint/Darren/Veronica Fax #: _____
 Invoice Address: Veronica 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: Jecher says they have a roof leak NO VISUAL OBSERVATION OF INTRUSION.

Sample #	Sample Description	Vol. / Area if applicable	Location / Notes
1	Exterior, North	75	T=66.5° H=22.9%
2	Exterior, Northwest	75	T=68.1° H=21.0%
3	Room 3B	150	T=68.7° H=29.2% M=6-10
			Walls = Drywall
			Ceiling = Ceiling Tile

Released By: <u>[Signature]</u>	Date / Time: <u>3/26/2013 2:20</u>	Received By: <u>[Signature]</u>	Date / Time: <u>3-28-13/8:10A</u>
Released By: _____	Date / Time: _____	Received By: _____	Date / Time: _____

Mold Services Definitions & Limitations/
Standard of Care and Reliance



CONSUMER MOLD INFORMATION SHEET*

Regulation of Mold Assessment and Remediation in Texas

How are businesses that do testing for mold or mold cleanup regulated?

Such businesses are now regulated by the Department of State Health Services (DSHS), based on legislation passed in 2003 ([Texas Occupations Code, Chapter 1958](#)). Under the **Texas Mold Assessment and Remediation Rules (Rules) (25 TAC §§295.301-295.338)**, all companies and individuals who perform mold-related activities will have to obtain appropriate licensing from the department by January 1, 2005. Applicants must meet certain qualifications, have required training and pass a state exam in order to receive their licenses. Mold remediation workers must have training and be registered with the department. Laboratories that analyze mold samples must also be licensed and meet certain qualifications. The rules set minimum work standards that licensees must follow and require them to follow a code of ethics. To prevent conflicts of interest, the rules also prohibit a licensee from conducting both mold assessment and mold remediation on the same project.

How can I know if someone is licensed?

A licensed individual is required to carry a photo ID issued by the department with a license number on it. The names of currently licensed companies and individuals are available on the Mold Licensing Program website at: www.tdh.state.tx.us/beh/mold.

What is “mold assessment?”

Mold assessment involves an inspection of a building to evaluate whether mold growth is present, and to what extent. Samples may be taken to determine the amount and types of mold that are present; however, sampling is not necessary in many cases. A mold assessment consultant is responsible for developing a **mold remediation protocol**, that specifies the estimated quantities and locations of materials to be remediated, the proposed methods to use and clearance criteria that must be met.

What is meant by “clearance criteria?”

Clearance criteria refer to the level of “cleanliness” that is to be achieved by the persons conducting the mold clean up. It is very important that you understand and agree with the assessor prior to starting the project what an acceptable clearance level will be, including what will be acceptable results for any air sampling or surface sampling for mold. There are no national or state standards identifying a “safe” level of mold. Mold spores are a natural part of the environment that are always present at some level in the air and on surfaces all around us. See below for more information about **post-remediation assessments**.

What is “mold remediation?”

Mold remediation is the clean up and removal of mold growth from surfaces and/or contents in a building. It also refers to actions taken to prevent mold from growing. **Mold remediators** must follow the **mold remediation protocol** described above and their own **mold remediation work plan** that provides specific instructions and/or standard operating procedures for how the project will be done.

Before a remediation project can be deemed successful, a **post-remediation assessment** must be conducted by a **mold assessment consultant**. This is an inspection to ensure that the work area is free from all visible mold and wood rot, the project was completed in compliance with the remediation protocol and remediation work plan, and meets all clearance criteria that were specified in the protocol. The assessment consultant must give you a **passed clearance report** documenting the results of this inspection. If the project fails clearance, further remediation as prescribed by a consultant will be necessary.

What is a Certificate of Mold Remediation?

No later than 10 days after a mold remediation job has passed a clearance inspection, the remediation contractor is required to give you a **Certificate of**

Mold Remediation. This certificate must also be signed by the licensed **mold assessment consultant** who conducted the post-remediation assessment. The consultant is required to state on the certificate that the mold contamination identified for the project has been remediated and whether or not the underlying cause of the mold has been corrected. (That work may involve other types of professional services that are not regulated by these rules, such as plumbers or carpenters.) Receiving a **Certificate of Mold Remediation** documenting that the underlying cause of the mold was remediated is an advantage for a homeowner. This certificate prevents an insurer from make an underwriting decision on the residential property based on previous mold damage or a claim for mold damage. If you later sell your property, the law requires that you provide the buyer a copy of all **Certificates of Mold Remediation** you have received for that property.

How is a property owner protected if a mold assessor or remediator does a poor job or actually damages the property?

The rules require licensees to have commercial general liability insurance in the amount of \$1 million, or be self-insured, to cover any damage to your property. Before hiring anyone, you should ask for proof of such insurance coverage. You may wish to inquire if the company carries additional insurance, such as professional liability/errors and omissions (for consultants) or pollution insurance (for contractors), that would provide additional recourse to you, the consumer, should the company fail to perform properly.

How is my confidentiality protected if I share personal information about myself with a company?

The code of ethics in the rules states that licensees are required to the extent required by law, to keep confidential any personal information about a client (including medical conditions) obtained during the course of a mold-related activity. If you desire more privacy, you may be able to negotiate a

contract to include language that other personal information be kept confidential unless disclosure “is required by law.” However, licensees are required to identify dates and addresses of projects and other details that can become public information.

How do I file a complaint about a company?

Anyone who believes a company or individual has violated the rules can file a complaint with the Department of State Health Services. For more information on this process and to obtain a complaint form, call (800) 293-0753, or download the complaint form at www.tdh.state.tx.us/beh/mold.

Can property owners do mold assessment or remediation on their own property without being licensed?

Yes. A homeowner can take samples for mold or clean up mold in his own home without a license. An owner, or a managing agent or employee of an owner of a residential property owned by that person is not required to be licensed, **unless** the property has 10 or more residential dwelling units. For non-residential properties, an owner or tenant, or a managing agent or employee of an owner or tenant, is not required to be licensed to do mold assessment or remediation on property owned or leased by the owner or tenant, **unless** the mold contamination affects a total surface area of 25 contiguous square feet or more. Please refer to 25 TAC 295.303 for further details on exceptions and exemptions to licensing requirements.

Where can I get more information?

For more information about mold and the Texas Mold Assessment and Remediation Rules, please visit the Mold Licensing Program website at www.tdh.state.tx.us/beh/mold, or contact program staff at 512-834-4509 or 800-293-0753.

*State law [25 TAC 295.306(c)] requires a licensee, except for a mold analysis laboratory, who is overseeing mold-related activities, to give each client a copy of this **Consumer Mold Information Sheet** before starting any mold-related activity.