May 24, 2021

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

Re: Limited Mold Assessment
The Colony High School - Office
4301 Blair Oaks
The Colony, Texas 75056
Ensolum Project No. 01A1288137

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

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

Sincerely,

Tod McLellan
Mold Assessment Consultant
MAC1361 EXP: 3/8/2022

Darren G. Bowden
Principal
MAC0321 EXP: 2/15/2022

1.0 INTRODUCTION

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

Mr. Tod McLellan completed the on-site investigation on May 7, 2021. The Limited Mold Assessment was performed in response to a complaint of possible indoor air quality issues within specific areas.

2.0 PROCEDURE

Ensolum visually inspected accessible areas Room A166. No Visible water damage or odors were observed in the following locations:

VISIBLE WATER DAMAGE		
LOCATION	DATE	EXPLANATION
Room A166	5/7/21	N/A

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

Representative Relative Humidity readings were collected and recorded using an Extech Instruments Humidity / Temperature Pen. Measurements recorded during the investigation are listed in the chart below:

TEMPERATURE, RELATIVE HUMIDITY & SPECIFIC HUMIDITY				
LOCATION	DATE	Temperature: F	Relative Humidity	Specific Humidity
Room A166	5/7/21	72.7	47.3	56.7
Outdoor Main	5/7/21	81.1	36.0	57.0

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

SPORE TRAP LOCATIONS	
SAMPLE NUMBER	LOCATION
357577	Room A166
357574	Outdoor Main
357575	Outdoor North

3.0 RESULTS

Currently, there are no regulatory standards for airborne fungal contamination. Therefore, results of the fungal analysis are compared against scientific guidelines. Bioaerosol samples are evaluated by comparing the indoor samples against the outdoor sample. The same types of fungi should be found in both the indoor and outdoor samples.

Should higher fungal concentrations occur in the indoor sample(s) or complaint areas, this generally indicates there is a source of fungal growth in the area. The types of fungi are also evaluated-the same types/genus of fungi should be present in both the indoor/complaint and outdoor/non-complaint samples.

The results of the fungal air samples collected were evaluated. Air testing performed using spore traps found that airborne mold spores within Room A166 were considerably lower and were qualitatively similar to those measured outside of the building at the time the sampling was performed.

CONCLUSIONS

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

APPENDIX A

ANALYTICAL DATA

U.S. Micro-Solutions, Inc. * 302 Unity Plaza * Latrobe, PA 15650
Phone: (724) 853-4047 Fax: (724) 853-4049 AIHA-LAP, LLC EMLAP # 103009
www.usmslab.com

LAB0158

Customer Name:	**Ensolum, LLC / Dallas**	**Sample Date:**	**May 7, 2021**
Customer Address:	**2351 W. Northwest Hwy, Suite 1203 Dallas, TX 75220**	**Date Received:**	**May 10, 2021**
		Date of Report:	**May 10, 2021**
Customer Phone:	**(682) 225-3050**	**Fax:**	
PO Number:		**Attention:**	**Tod McLellan**
Project Name/Number:	**TCHS Office**		

Customer sample numbers below are uniquely identified by prefixing Laboratory # 54540-21

Airborne Spore Trap Analysis - AllergencoD
Analytical Method: MIC 01

Total Volume (L)		**75**				**75**				**75**			
Sample Number		**357577**				**357574**				**357575**			
Location:		**Room A166**				**Outdoor Main**				**Outdoor North**			
Particle ID		**Raw ct.**	**AS**	**Spores/m³**	**%**	**Raw ct.**	**AS**	**Spores/m³**	**%**	**Raw ct.**	**AS**	**Spores/m³**	**%**
Alternaria						1	13	**13**	0%	4	13	**52**	0%
Ascospores		1	13	**13**	7%	52	13	**676**	3%	46	13	**598**	3%
Aspergillus/Penicillium-like		4	13	**52**	27%					9	13	**117**	1%
Basidiospores		6	13	**78**	40%	120	178	**21,360**	88%	143	133	**19,019**	89%
Bipolaris/Drechslera													
Cercospora						1	13	**13**	0%	1	13	**13**	0%
Chaetomium													
Cladosporium		3	13	**39**	20%	155	13	**2,015**	8%	110	13	**1,430**	7%
Curvularia		1	13	**13**	7%	1	13	**13**	0%				
Epicoccum													
Helicomyces													
Nigrospora													
Oidium													
Pithomyces/Ulocladium													
Polythrincium													
Rusts													
Smuts/ Myxomycetes						7	13	**91**	0%	2	13	**26**	0%
Stachybotrys													
Torula													
Trichoderma													
Unidentified dematiaceous conidia													
Unidentified hyaline conidia													
Total Mold (Spores/m³ of air)		15		**195**		337		**24,181**		315		**21,255**	
Pollen		1	13	**13**		2	13	**26**		0	13	< **13**	
Hyphal Fragments		1	13	**13**		2	13	**26**					
Insect Fragments													
Plant Fragments													
Skin Cell Fragments		1				1				1			
Debris		2				1				1			
Analyst Initials		LS				LS				LS			
Date Analyzed		05/10/21				05/10/21				05/10/21			
Exp Date of Cassette:		03/2022				03/2022				03/2022			

Entire trace analyzed. Samples are in good condition unless otherwise noted. Results relate only to the samples tested as received. Results are reported as calculated. For biological data, the first and/or second digit should be considered significant. Total percentage may not equal 100% due to rounding. Percentages reported as 0% are greater than 0 and less than 0.5%. The *Aspergillus/Penicllium* -like category cannot be differentiated by non-viable sampling methods.

AS=Analytical Sensitivity (spores/m^3); Blank Lines = None Detected

When providing duplicates of this report, the document should be provided in total and not in section in accordance with AIHA-LAP, LLC. Any unauthorized or improper disclosure, copying, distribution, use, or falsification of these results is prohibited. USMS shall have no liability to the Customer or the Customer's customer for opinions stated, recommendations made, actions taken, or conduct implemented based on the test results reported.

Technical Manager: Deanna L Kiska

Deanna L. Kiska, Ph.D.

SPORE TRAP INTERPRETATION TIPS

Contains opinions and interpretations

Currently there are no numeric standards for indoor airborne or surface microbial contamination. Suggested guidelines are constantly being reviewed and updated as more information is collected.

Some common denominators should be considered when interpreting results:

1. Comparison of indoor/outdoor concentration ratios.

2. Complaint vs. non-complaint areas or affected vs. non-affected areas.

3. Consider air exchange rates and activity levels in a building structure, weather, and season of the year.

4. Rank order assessment and concentration (e.g. Spores/m^3 of air) of the fungi.

5. Predominant fungal genera: Are there water indicator microorganisms present, such as but not limited to: *Chaetomium, Stachybotrys, Rhodotorula, Trichoderma,* and *Scopulariopsis.*

6. Generally fungal counts indoors should be lower than outdoor counts and the types of fungi found indoors should be similar to outdoors.

7. There is always a potential bias from infiltration of outdoor air, poor housekeeping, excessive indoor relative humidity, or potential contamination sources (e.g. water intrusion through a basement wall) that may negatively influence post remedial verification (PRV) or clearance levels.

8. The investigator should look for various patterns among the indoor types of molds detected:

   a. Increased levels of primary (1st) colonizers in damp or moisture intrusion areas of homes or commercial buildings: ***Aspergillus/Penicillium*** or ***Cladosporium*** are usually noted.

   b. ***Chaetomium*** or ***Stachybotrys*** are tertiary (3rd) colonizers of indoor materials and are usually associated with chronic long-standing water/moisture issues in a building.

   c. The presence of **hyphal fragments** or **fruiting structures** noted on spore trap samples usually indicates amplification (growth) of fungi on building substrates.

   d. **Ascospores** and **basidiospores** noted on indoor spore trap samples most often represent the entrance of inadequately filtered outdoor air. During inclement weather, remember to note time, temperature, and season. Most indoor materials will not support the growth of these fungi.

9. When unidentified **hyaline** (clear) or **dematiaceous** (dark-pigmented) conidia are noted on a spore trap sample, it indicates that no particular fungus can be identified. These fungal conidia may represent such yeast-like fungi as *Aureobasidium, Sporidiobolus,* unidentifiable *Acremonium* species, Basidiomycetes (basidiospores), and Ascomycetes (ascospores).

10. Keep in mind when interpreting spore trap sample reports, that indoor levels may be higher than corresponding outdoor levels (winter time in the northern U.S.) with a predominance of *Aspergillus/Penicillium* or *Cladosporium* conidia with no significant amplification of any molds.

SPORE TRAP GUIDELINES

DEBRIS RATING		
DEBRIS RATING	**Debris Load** per high power field (600 X)	**SIGNIFICANCE**
0	A visible trace, including particulates and debris, is not observed.	Indicates the sample is a blank, the area is exceptionally clean, or improper sampling occurred.
1	<5%	Minimal amount of debris is observed.
2	5-25%	Low amount of debris is observed, counts may be affected.
3*	25-75%	Moderate amount of debris is observed, counts of conidia/hyphal fragments may be underestimated.
4* See Relative Abundance chart below	75-90%	High amount of debris is observed, counts are estimated or relative abundance is reported. Suggest recollection.
5*	>90%	Unable to analyze. Recollect sample.

*A rating of 3 or greater indicates that the accuracy of the analysis is likely affected.

RELATIVE ABUNDANCE of FUNGAL PARTICLES (hyphal fragments, spores)	
RATING	**Fungal Particle Load** per high power field (600 X)
Rare	<5%
Few	5-25%
Moderate	25-75%
Many	75-90%
Numerous	>90%

SKIN CELL RATING	
SKIN CELL RATING	**Skin Cell Load** per high power field (600 X)
0	No skin cells present
1	<5%
2	5-25%
3	25-75%
4	75-90%
5	>90%

End of Report

U.S. Micro-Solutions, Inc.

302 Unity Plaza
Latrobe, PA 15650
P: 724-853-4047 F: 724-853-4049
supplies@usmslab.com

Lab ID # 103009

NY ELAP #12055 The New York Environmental Laboratory Approval Program

LABORATORY TEST REQUEST – CHAIN OF CUSTODY

Customer Name: Ensolum, LLC / Dallas	Phone #: 682-225-3050	FAX #:	
Address: 2351 W. Northwest Hwy, Suite 1203	City: Dallas	State: TX	Zip: 75220
Attention To: Tod McLellan	E-Mail: tmclellan@ensolum.com, smclellan@ensolum.com, jcolson@ensolu.com		
Sample Obtained By: Tod McLellan	Results: ☐ FAX ■ E-Mail	PO#	Proposal # 01A1288137
Project Name/Number: TCHS Office			

Turn-Around-Time: (Spore Trap & DME Only)*
Standard (48-72 hr) ☐ Next Day (24 hr, M-F) ☐ Same Day (6 hr, M-F) ☑ 3-Hour (M-F) ☐ Saturday ☐

Comments:

Sample #	Sample Date / Time	Sample Code	Analysis Code	Sample Location & Description	Sample Volume/Area
357577	05.07	ST	SPT	Room A166	75L
357574	05.07	ST	SPT	Outdoor Main	75L
357575	05.07	ST	SPT	Outdoor North	75L

Relinquished By (Customer MUST sign): [signature] Date & Time: 05.07@1300

Received By – Lab Use Only: [signature] Date & Time: 05/10/21 0930 Lab #: 54540-21

Sample Code	
A	Air Plate
B	Bulk
ST	Spore Trap
S	Swab
W	Water
T	Tape
O	Other

Analysis Code			
DME	Direct Microscopic Exam	COL	Colilert – Presence/absence of *E. coli*, coliforms
SPT	Spore Trap ■ Allergenco-D ☐ AirOCell ☐ M5	HPC	Heterotrophic Plate Count
FUNG	Fungal Culture – Counts w/ Identification	MYC	Mycobacteria Culture
BACT	Bacterial Culture – Counts w/ Identification	STA	*Staphylococcus* / MRSA Culture
BACT24	Bacterial Culture (24 hr) - Counts w/ presence/absence of gram-negatives	DUO	Duodenoscope Culture
SSQT	Sewage Screen (quant) – Counts w/ Identification *E. coli, coliforms, enterococci (fecal streptococci)*	HCU	Heater/Cooler Water Culture *includes mycobacteria, HPC, coliforms, & P. aeruginosa*
SSQL	Sewage Screen (qualitative) – Presence/absence *E. coli, coliforms, enterococci (fecal streptococci)*	PSA	*Pseudomonas aeruginosa* Culture
SS24	Sewage Screen (24 hr) - Presence/absence *E. coli, coliforms, enterococci (fecal streptococci)*	IDS	Species Identification by MALDI-TOF

*All samples received after 1:00 p.m. Monday-Friday will be considered received the NEXT business day.
Same Day and Next Day samples received on Saturday will be reported on Monday and Tuesday, respectively.

APPENDIX B

DEFINITIONS AND LIMITATIONS

ENSOLUM

Mold Services Definitions & Limitations

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

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

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

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

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

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

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

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

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