

# LIMITED MOLD AND MOISTURE ASSESSMENT



PATRICK HENRY SWING SPACE

4643 TANEY AVENUE  
ALEXANDRIA, VIRGINIA 22304

ECS PROJECT NO. 47:1519-Q

FOR: ALEXANDRIA CITY PUBLIC SCHOOLS

OCTOBER 2, 2020





October 2, 2020

Ms. Nicole Settles  
Alexandria City Public Schools  
1340 Braddock Place  
Alexandria, Virginia 22314  
nicole.settles@acps.K12.va.us

ECS Project No. 47:1519-Q

Reference: Limited Mold and Moisture Assessment, Patrick Henry Swing Space, 4643 Taney Avenue, Alexandria, Virginia

Dear Ms. Settles:

ECS Mid-Atlantic, LLC (ECS) is pleased to provide Alexandria City Public Schools with the results of the above referenced Limited Mold and Moisture Assessment performed at Patrick Henry Swing Space located at 4643 Taney Avenue in Alexandria, Virginia. This report summarizes our observations, analytical results, findings, and recommendations related to the work performed. The work described in this report was performed by ECS in general accordance with the Scope of Services described in ECS Proposal Number 47:16071-EP and the terms and conditions of the agreement authorizing those services.

ECS appreciates this opportunity to provide Alexandria City Public Schools with our services. If we can be of further assistance to you, please do not hesitate to contact us.

Sincerely,

ECS Mid-Atlantic, LLC

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## EXECUTIVE SUMMARY

Reportedly, an ACPS employee noted evidence of mold and/or moisture within or around Classrooms 1044, 1046, 1055, and 1057 and the adjoining hallway of the above-referenced building. ECS was request to provide observations and testing services for mold and moisture within Classrooms 1044, 1046, 1055, & 1057 and the adjoining hallway of the above-referenced building. No other areas of the school building were included in the scope of work. The following presents a summary of our observations:

- Visible microbial growth and water staining were observed on the brown fiberboard decking within the ceiling cavity of the subject hallway
- Visible microbial growth and water staining impact were observed within the trophy display case in the hallway
- Water staining was observed on the 1'x1' ceiling tiles within the ceiling cavity of each classroom

According to ECS's Management Plan (Reference Report No. 47:1519-D dated December 29, 2016), the white acoustical plaster above the drop ceiling was previously reported to contain asbestos. ECS was unable to observe the materials above the 1' x 1' ceiling tiles in the classrooms because of the assumption that the ceiling tiles are attached to the asbestos-containing acoustical ceiling plaster. Samples of the brown fiberboard, the 1'x1' ceiling tile, and associated ceiling tile mastic were previously reported to not contain asbestos. .

The executive summary is an integral portion of this report, however, ECS recommends the report be read in its entirety.

<b>TABLE OF CONTENTS</b>		<b>PAGE</b>
<b>1.0</b>	<b>SITE DESCRIPTION</b> .....	<b>1</b>
<b>2.0</b>	<b>PURPOSE</b> .....	<b>1</b>
<b>3.0</b>	<b>METHODOLOGY</b> .....	<b>1</b>
3.1	Mold and Moisture .....	1
<b>4.0</b>	<b>RESULTS</b> .....	<b>2</b>
4.1	Asbestos-Containing Materials .....	2
4.2	Mold and Moisture .....	2
4.2.1	Spore-Trap Air Samples .....	3
4.2.2	Temperature and Relative Humidity .....	3
<b>5.0</b>	<b>RECOMMENDATIONS AND REGULATORY REQUIREMENTS</b> .....	<b>4</b>
5.1	Asbestos-Containing Materials .....	4
5.2	Mold and Moisture .....	5
<b>6.0</b>	<b>LIMITATIONS</b> .....	<b>7</b>

## **TABLE OF APPENDICES**

Appendix I: Site Photographs

Appendix II: Laboratory Report(s)

Appendix III: Mold Reference and Guidance Documents

## 1.0 SITE DESCRIPTION

## 2.0 PURPOSE

The purpose of the Limited Mold and Moisture Assessment was to identify the extent of mold and moisture-affected building materials within the subject area and provide recommendations for remediation. The assessment was limited to accessible interior portions of Classrooms 1044, 1046, 1055, & 1057 and the adjoining hallway.

## 3.0 METHODOLOGY

ECS performed the authorized Scope of Services in general accordance with our proposal, standard industry practice(s) and methods specified by guidelines and industry standards for the identification of mold and moisture-affected building materials.

### 3.1 Mold and Moisture

#### Visual Survey

ECS conducted a visual non-invasive survey of accessible areas of Classrooms 1044, 1046, 1055, & 1057 and the adjoining hallway to assess selected building materials. The ECS site personnel observed readily accessible areas and selected building materials to evaluate visible suspect fungal growth and/or moisture impacted materials. A reasonable effort was made to identify water and mold impacted areas; however, this does not imply a guarantee that all possible reservoirs (growth or airborne) of mold growth were identified because mold or water-impacted building materials may be hidden by walls, flooring, partitions, etc.

#### Direct-Read Measurements

Ambient temperature and relative humidity (RH) was measured during the survey using a Extech brand Hygro-Thermometer Pen. The purpose of these measurements was to evaluate if interior temperature and RH levels were sufficient to support mold development, and also to measure general indoor comfort parameters related to temperature and relative humidity. Relative humidity is defined as the ratio of the amount of moisture contained in the measured air to the maximum amount of moisture the air can contain at that specific temperature. The EPA recommends maintaining the relative humidity (RH) below 60%, ideally 30 to 50%, to prevent mold growth.

#### Fungal Spore Air Sampling

Air samples were collected using a high volume sampling pump and Air-o-Cell© cassettes to sample ambient air for airborne fungal spores, hyphal fragments, insect fragments, and pollen. Analytical background levels on the slides of skin fragments, fibers, and other debris are also reported. Samples were collected approximately four feet from the floor to represent the approximate breathing zone. Samples were collected with an air flow of 15 liters per minute for a duration of five minutes. The sampling pumps were calibrated before and after sample collection using a calibrated rotameter.

The intent of this air testing is to profile the air in select locations within the building in regards to fungal spore activity. Elevation of airborne fungal spore counts within the structure can be used as an indicator of the possible presence of mold growth generated by sources of moisture within a building. However lack of elevations in spore count levels does not necessarily indicate that moisture intrusion concerns do not exist.

Samples collected were transported/shipped to Scientific Analysis Institute (SAI) located in Greensboro, North Carolina for analysis. SAI is an AIHA (American Industrial Hygiene Association) EMLAP (Environmental Microbiology Laboratory Accreditation Program) accredited laboratory. The samples were analyzed for total spore concentrations in accordance to the laboratory's quantification methods. The analytical results and chain of custody are attached.

It is important to note that microbial samples represent a snapshot in time of a constantly changing microbiome. Environmental conditions such as temperature, humidity, surface moisture, wind, vibration, sunlight, and many others all have an influence on microbes in the built environment, and consequently also influence sample results. The goal of the sampling performed was not to establish precise numerical concentrations over time, but rather to generally identify the dominant fungi in the sampled locations and the general significance of their relative concentrations.

#### **4.0 RESULTS**

The following is a summary of laboratory results, findings and observations.

##### **4.1 Asbestos-Containing Materials**

According to ECS's Management Plan (Reference Report No. 47:1519-D dated December 29, 2016), the white acoustical plaster above the drop ceiling was previously reported to contain asbestos. ECS was unable to observe above the 1' x 1' ceiling tiles within the classrooms due to the assumption that the 1'x1' ceiling tiles are attached to the asbestos-containing plaster.

##### **4.2 Mold and Moisture**

ECS performed a non-invasive visual survey in Classrooms 1044, 1046, 1055, & 1057 and the adjoining hallway. ECS observed suspected mold growth within a display case in the subject hallway. ECS also observed suspected mold growth on the fiberboard decking in the ceiling cavity. Note that the asbestos-containing white acoustical plaster ceiling was recently abated within the subject section of hallway which allowed ECS to observed the fiberboard decking within the hallway. The fiberboard decking may be impacted in other areas within the scope of work that ECS was unable to access.

ECS observed water staining on the 1'x1' ceiling tile above the drop ceiling in each of the classrooms. Note that ECS was unable to observed the ceiling cavity above the 1' x 1' ceiling tiles.

Below is a summary of the sampling data collected as part of this evaluation.

#### 4.2.1 Spore-Trap Air Samples

Representative fungal spore-trap air samples were collected from Classroom 1046, 1055, and the adjoining hallway. Representative exterior samples were collected for comparison. The following table summarizes the results of sample analysis reported in spore counts per cubic meter of air.

##### Spore-Trap Sample Results

Sample Number	Sample Location	Total Fungal Spore Concentration (count/cubic meter)
1	Outside 1	10100
2	Classroom 1046	391
3	Hallway	784
4	Classroom 1055	78
5	Outside 2	5880

Interpretation of fungal spore air sample results relies on comparison of the samples collected in targeted indoor areas to samples collected in unaffected indoor areas and outdoors. For each sample set, the total fungal spore concentration was compared to outdoors to identify anomalies.

The airborne fungal spore concentrations in the representative classrooms and the hallway were reported less than the airborne fungal spore concentrations when compared to outdoors. Note that levels of *Myxomycete/ Rust/ Smut-like* detect in the Hallway sample (Sample No. 3) were slightly above exterior levels but do not appear to represent a significant deviation from exterior concentrations. The laboratory reports are also attached for reference.

There are currently no accepted regulatory standards or guidelines with respect to acceptable fungal levels inside buildings. It is important to note however that spore trap measurements can fluctuate rapidly and the readings reported should not be used as a definitive indication that mold and or health hazards related to mold are present or absent.

#### 4.2.2 Temperature and Relative Humidity

The following table summarizes the indoor air temperature and relative humidity readings collected by ECS from various locations.

Relative humidity is defined as the ratio of the amount of moisture contained in the measured air to the maximum amount of moisture the air can contain at that specific temperature. The EPA recommends maintaining the relative humidity (RH) below 60%, ideally in the range of 30% to 50%, to prevent mold growth.



No precipitation was encountered during our evaluation. Exterior conditions were sunny and cool at the time of our evaluation. Elevated relative humidity levels were reported within the tested area. Temperature readings collected from the surveyed area were reported to be within the The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) recommended range of 68.5°F to 75°F .

**Temperature and Relative Humidity**

Location	Relative Humidity (%)	Temperature (°F)
Outside	48.1	72.3
Classroom 1044	39.9	71.9
Hallway	41.2	71.9
Classroom 1046	39.9	71.8
Classroom 1055	39.9	71.8
Classroom 1057	40.8	71.9
Outside	48.2	72.1

**5.0 RECOMMENDATIONS AND REGULATORY REQUIREMENTS**

Based on our understanding of the purpose of the Limited Mold and Moisture Assessment, the results of laboratory analysis, and our findings and observations, ECS presents the following recommendations.

**5.1 Asbestos-Containing Materials**

If it is determined that the acoustical ceiling plaster be disturbed during remediation, ECS has the following recommendations.

Prior to removal of Asbestos-Containing Materials (ACMs), notification may be required by either by Virginia and/or the EPA. This notification, if appropriate, must be filed by a Virginia certified asbestos abatement contractor 20 calendar days before starting an asbestos abatement project (>10 linear feet or more or 10 square feet). If applicable, the EPA notification must be filed ten 10 business days prior to starting asbestos abatement activities.

If ACMs are to be removed, it is recommended that an licensed Commonwealth of Virginia project monitor the project. This involves collecting air samples from within and outside abatement work areas to monitor the asbestos abatement contractor’s work practices over the course of the project. The project monitor should evaluate if the asbestos abatement work is in accordance with project specifications, U.S. EPA regulation 40 CFR Part 61-National Emission Standards for Hazardous Air Pollutants Subpart M: National Emission Standard for Asbestos, and U.S. Occupational Safety and Health Administration (OSHA) regulation 29 CFR 1926.1101 – Asbestos in Construction. The industrial



hygienist should assess each work area to monitor the removal of ACMs. Only after the project monitor has determined the identified ACMs have been removed should final clearance air samples be collected (if necessary).

Suspect ACMs not observed due to inaccessibility or not sampled due to the destructive means that sampling would require may also be encountered during construction activities. At the time of the survey, only visual observations were made to locate suspect ACMs; therefore, additional suspect ACMs may remain within inaccessible areas that include, but are not limited to, sub-grade walls, structural members, topping slabs, exterior areas, sub-grade sealants, flooring located below underlayments, vapor barriers, pipe trenches and other subsurface utilities, etc. If additional suspect ACMs are uncovered which were not accessible during this survey, it is recommended that these materials either be assumed to contain asbestos or be sampled prior to disturbance upon discovery for asbestos content by an asbestos inspector in accordance with 29 CFR 1926.11.

Documentation of planned abatement activities should be added to the school buildings AHERA management plan.

## **5.2 Mold and Moisture**

Based on our observations, visible mold, discolorations and/or water staining were observed on ceiling tiles, fiberboard decking, and/or display case materials in the selected areas.

ECS recommends remediation be performed for all water and mold impacted materials within the surveyed areas as soon as reasonably possible. This includes all materials that have visible mold and have been subjected to elevated moisture conditions for greater than 48 hours without proper drying efforts. It is ECS's understanding that the source of the water intrusion has been identified and addressed. If this is not accurate, ECS recommends the source of the water intrusion be identified and remediated prior to abatement efforts.

Based on New York City Department of Health, OSHA, and US EPA guidance, small areas of mold (up to one square foot) can be cleaned up by either custodial or contract personnel using proper protective equipment. Larger areas of fungal growth should be addressed by professional contractors with trained personnel using appropriate engineering controls and work practices.

Concurrent with or following the mold remediation, ECS recommends that the HVAC systems serving the affected classrooms and the adjoining hallway be inspected by a professional HVAC engineer/contractor for proper operation and evidence of mold. Any visible soiling should be cleaned in accordance with National Air Duct Cleaners Association (NADCA) standards.

ECS recommends that a qualified mold remediation/drying contractor be retained to properly remove mold impacted materials. Remediation activities should be performed in general accordance with the guidelines described in EPA's March 2001 document "Mold Remediation in Schools and Commercial Buildings" and under the OSHA 2010 Guidelines for mold removal. Additional remedial guidance documents are also referenced in Section at the end of this report. Workers performing this work should wear proper personal protective equipment (PPE) including HEPA filtered respirators and disposable clothing (per OSHA standards for PPE). If any sources of moisture exist, should be identified and eliminated, where possible.

1. All visibly water stained ceiling tiles should be removed and discarded. This includes tiles that were previously stained and have been painted.
  - Replacement of the ceiling tiles with new, unstained tiles is important for several reasons. This documents that the water leak has been addressed. New, unstained ceiling tiles are also needed to identify recurring leaks for appropriate action.
2. All fiberboard decking and wall/display case materials that have visible growth should also be removed in excess of 2 feet beyond visible mold or water stains where feasible. Delineation of the wall and ceiling systems may be necessary during remedial efforts to determine if additional materials will need to be removed.

If the remedial activities will disturb asbestos-containing materials (ACMs), the ACMs should be abated by a licensed abatement contractor prior to mold/moisture remediation activities.

In general accordance with the EPA and OSHA guidelines, ECS recommends containment using plastic barriers and tape to create negative pressure containment during removal of mold impacted materials. The contractor should seal HVAC vents in the work area(s), as well as all penetrations and openings. Pressure differential in the containment should be -0.02 inches of water gauge between the outside and inside of containment. A HEPA-filtered local exhaust ventilation (negative air machine) should be utilized directly adjacent to the area(s) being cleaned and should maintain negative pressure and HEPA filtration continuously inside the containment during remediation activities and prior to clearance sampling.

Following remediation/removal of mold-impacted materials, ECS recommends that the contained areas of the building undergo a thorough cleaning following guidelines described in EPA's March 2001 document "Mold Remediation in Schools and Commercial Buildings." Surface remediation should include HEPA vacuuming of vertical and horizontal surfaces and a clean-wipe with a mild detergent. The surfaces should not be saturated and discard cleaning cloths. All areas (affected and unaffected) should be left dry, visibly free from contamination and debris prior to build back activities.

In addition, ECS is unaware of the presence of lead-based paints (LBP) in the classrooms or the adjoining hallway. ECS is aware of the presence of some asbestos-containing materials within the classrooms and the adjoining hallway. Please refer to Section 4.2 and Section 5.1 in regards to asbestos-containing materials (ACMs). Prior to performing any remediation work or other disturbance related to mold remediation, the building owner should address abatement of hazardous materials. All federal, state, and local regulations should be followed.

After moisture intrusion concerns have been identified and corrected, and mold remediation has been completed, ECS recommends performing post remediation services for the affected classrooms and the adjoining hallway. Post remediation services include performing a visual survey and possibly testing services. The industrial hygienist will require that negative air machines be turned off for a period of 24 to 48 hours prior to any air testing (if performed).

As an ongoing measure, ECS recommends that all staff and faculty be directed, encouraged, and reminded to report all water stains or moisture intrusion concerns promptly to facilities personnel to be addressed.

Because of the nature of this environment, complete remediation of all microbial organisms within a building cannot be guaranteed. It is important to note that the reported mold levels are only reflective of conditions at the time of this test and that mold populations can vary over time, depending upon a number of conditions, including environmental factors (i.e., temperature and relative humidity). If significant mold growth reappears, or if the occupants experience prolonged allergic-type health complaints, they should seek further investigation of the problem.

Note: The purpose of this survey was to evaluate areas where visible or apparent mold growth and/or moisture intrusion has occurred and provide findings and recommendations for remedial work efforts. Identification and recommendation(s) for correction of all moisture intrusion concerns was outside of the scope of services for this work. As good practice all moisture intrusion concerns should be identified and corrected by a qualified contractor/engineer.

## 6.0 LIMITATIONS

The conclusions and recommendations presented within this report are based upon a reasonable level of assessment within normal bounds and standards of professional practice for a site in this particular geographic setting. ECS is not responsible or liable for the discovery and elimination of hazards that may potentially cause damage, accidents, or injuries.

This survey is not intended to represent an exhaustive research of every potential hazard or condition that may exist, nor does it claim to represent indoor conditions or events that arise after the survey. This report has been prepared in accordance with generally accepted environmental practices. Our conclusions and findings are based, in part, upon information provided to us by others and our site observations. We have not verified the completeness or accuracy of the information provided by others. The scope of services performed was limited to those requested by the Client and does not constitute a full microbial assessment of the site or a comprehensive moisture survey of the site. The data provided in this study is only indicative of conditions sampled at the immediate time of the study. The work performed in conjunction with this assessment and the data developed is intended as a description of available information at the dates and locations given. This report does not warrant against future operations or conditions, nor does it warrant against extant, or future, conditions of a type or at a location not investigated. Because of the nature of this type of work and the difficulties involved in conducting remediation work, ECS cannot guarantee that the methods or recommendations described in this report will eliminate all potential indoor air quality issues. Since performance of the remediation work is also beyond ECS scope of services, ECS also cannot be held responsible for the execution of the remediation work. The reported microbial levels are only reflective of conditions at the time of this test and that microbial populations can vary over time, depending upon a number of conditions, including environmental factors (i.e., temperature and relative humidity). The work performed in conjunction with this assessment and the data developed is intended as a description of available information at the dates and locations given.

The observations, conclusions, and recommendations pertaining to environmental conditions at the subject site are necessarily limited to conditions observed, and/or materials reviewed at the time this study was undertaken. No warranty, expressed or implied, is made with regard to the conclusions and recommendations presented within this report. This report is provided for the exclusive use of the client. This report is not intended to be used or relied upon in connection with other projects or by other unidentified third parties without the written consent of ECS and the client.

Our recommendations are in part based on federal, state, and local regulations and guidelines. ECS does not assume the responsibility of the person(s) in charge of the site, or otherwise undertake responsibility for reporting to any local, state, or federal public agencies, any conditions at the site that may present a potential danger to public health, safety, or the environment. Under this scope of services, ECS assumes no responsibility regarding any response actions initiated as a result of these findings. General compliance with regulations and response actions are the sole responsibility of the Client and should be conducted in accordance with local, state, and/or federal requirements.

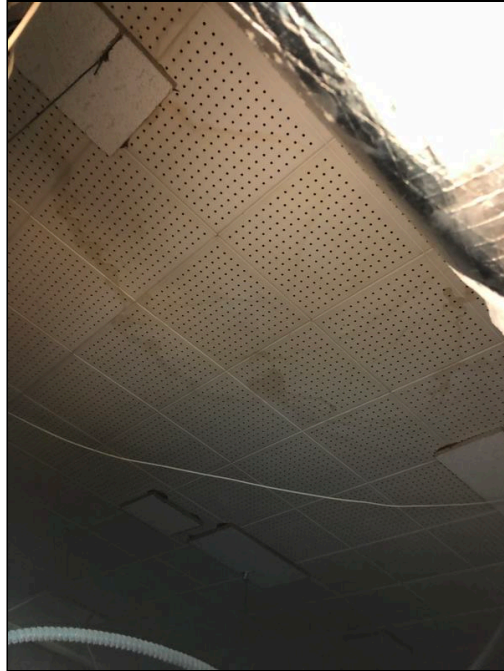
# **Appendix I: Site Photographs**



1 - Display case in hallway with visible microbial growth



2 - Visible microbial growth above drop ceiling in the hallway



3 - Representative photograph of water stained 1'x1' ceiling tile above the drop ceiling in classrooms



# **Appendix II: Laboratory Report(s)**



# Direct Exam: Spore Trap Analysis



SAI Method B-SOP-003

**Client:** ECS Mid-Atlantic  
6710 Oxon Hill Rd. #101  
National Harbor, MD 20745

**Attn:** Lauren Kesslak

**Lab Order ID:** 71950706  
**Analysis ID:** 71950706\_STA  
**Date Received:** 09/24/2020  
**Date Reported:** 09/24/2020

**Project:** 47:1519-Q Patrick Henry Swing Space

Sample ID	1			2			3			EXTERIOR AVERAGE		
Lab Sample ID	71950706_STA_001			71950706_STA_002			71950706_STA_003			N/A		
Description	Outside			1046			Hallway			N/A		
Lab Notes										N/A		
Volume(L)	75			75			75			N/A		
Analytical Sensitivity (counts/m <sup>3</sup> )	78			78			78			N/A		
IDENTIFICATION	Raw Count	Concentration (counts/m <sup>3</sup> )	% Of Total	Raw Count	Concentration (counts/m <sup>3</sup> )	% Of Total	Raw Count	Concentration (counts/m <sup>3</sup> )	% Of Total	Raw Count	Concentration (counts/m <sup>3</sup> )	% Of Total
<i>Alternaria</i>	2	157	1.55%							2	118	2.00%
Ascospores	61	4780	47.3%	2	157	40.0%	5	392	50.0%	54	4190	54.0%
<i>Aspergillus/ Penicillium-like</i>	8	627	6.20%							4	314	4.00%
Basidiospores	19	1490	14.7%							18	1450	18.0%
<i>Cladosporium</i>	20	1570	15.5%	1	78.0	20.0%				14	1140	14.0%
<i>Epicoccum</i>	1	78.0	0.775%							<1	39.0	N/A
Myxomycete/ Rust/ Smut-like	4	313	3.10%	1	78.0	20.0%	5	392	50.0%	2	157	2.00%
<i>Nigrospora</i>	1	78.0	0.775%	1	78.0	20.0%				<1	39.0	N/A
<i>Pithomyces</i>	1	78.0	0.775%							<1	39.0	N/A
<i>Polythrincium</i>	2	157	1.55%							1	79.0	1.00%
<i>Torula</i>	6	470.	4.65%							3	235	3.00%
Unknown/Other	4	313	3.10%							2	196	2.00%
<b>TOTAL</b>	<b>129</b>	<b>10100</b>	<b>100.0%</b>	<b>5</b>	<b>391</b>	<b>100.0%</b>	<b>10</b>	<b>784</b>	<b>100.0%</b>	<b>100</b>	<b>8000</b>	<b>100.0%</b>
Non-Cellulosic Fibers	-	-	-	-	-	-	-	-	-	-	-	-
Hypthal Fragments	3	235	-	-	-	-	-	-	-	2	157	-
Insect Parts	-	-	-	-	-	-	-	-	-	-	-	-
Pollen	13	1020	-	-	-	-	3	235	-	8	627	-
<b>Skin Cell % of Total Debris</b>		<b>0-20%</b>			<b>0-20%</b>			<b>20-40%</b>			<b>N/A</b>	
<b>Total Debris in Background</b>		<b>40-60%</b>			<b>20-40%</b>			<b>20-40%</b>			<b>N/A</b>	

Disclaimer: This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. Unless otherwise noted blank sample correction was not performed on analytical results. Scientific Analytical Institute participates in the AIHA EMPAT program for fungi. EMPAT Laboratory ID: 173190. Reporting Limit equals Analytical Sensitivity. Unless indicated, areas and volumes were provided by the customer.

Darrin Parrick (5)

Analyst

Approved Signatory



# Direct Exam: Spore Trap Analysis



SAI Method B-SOP-003

**Client:** ECS Mid-Atlantic  
6710 Oxon Hill Rd. #101  
National Harbor, MD 20745

**Attn:** Lauren Kesslak

**Lab Order ID:** 71950706  
**Analysis ID:** 71950706\_STA  
**Date Received:** 09/24/2020  
**Date Reported:** 09/24/2020

**Project:** 47:1519-Q Patrick Henry Swing Space

Sample ID	4	5	EXTERIOR						
Lab Sample ID	71950706_STA_004	71950706_STA_005	AVERAGE						
Description	1055	Outside	N/A						
Lab Notes			N/A						
Volume(L)	75	75	N/A						
Analytical Sensitivity (counts/m <sup>3</sup> )	78	78	N/A						
IDENTIFICATION	Raw Count	Concentration (counts/m <sup>3</sup> )	% Of Total	Raw Count	Concentration (counts/m <sup>3</sup> )	% Of Total	Raw Count	Concentration (counts/m <sup>3</sup> )	% Of Total
<i>Alternaria</i>				1	78.0	1.33%	2	118	2.00%
Ascospores				46	3610	61.3%	54	4190	54.0%
<i>Aspergillus/ Penicillium-like</i>							4	314	4.00%
Basidiospores	1	78.0	100.0%	18	1410	24.0%	18	1450	18.0%
<i>Cladosporium</i>				9	705	12.0%	14	1140	14.0%
<i>Epicoccum</i>							<1	39.0	N/A
Myxomycete/ Rust/ Smut-like							2	157	2.00%
<i>Nigrospora</i>							<1	39.0	N/A
<i>Pithomyces</i>							<1	39.0	N/A
<i>Polythrincium</i>							1	79.0	1.00%
<i>Torula</i>							3	235	3.00%
Unknown/Other				1	78.0	1.33%	2	196	2.00%
<b>TOTAL</b>	<b>1</b>	<b>78.0</b>	<b>100.0%</b>	<b>75</b>	<b>5880</b>	<b>100.0%</b>	<b>100</b>	<b>8000</b>	<b>100.0%</b>
Non-Cellulosic Fibers	-	-	-	-	-	-	-	-	-
Hypal Fragments	-	-	-	1	78.0	-	2	157	-
Insect Parts	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	3	235	-	8	627	-
<b>Skin Cell % of Total Debris</b>		<b>20-40%</b>			<b>0-20%</b>			<b>N/A</b>	
<b>Total Debris in Background</b>		<b>20-40%</b>			<b>20-40%</b>			<b>N/A</b>	

Disclaimer: This report relates only to the samples tested and may not be reproduced, except in full, without the written approval of SAI. Unless otherwise noted blank sample correction was not performed on analytical results. Scientific Analytical Institute participates in the AIHA EMPAT program for fungi. EMPAT Laboratory ID: 173190. Reporting Limit equals Analytical Sensitivity. Unless indicated, areas and volumes were provided by the customer.

Darrin Parrick (5)

Analyst

Approved Signatory



# **Appendix III: Mold Reference and Guidance Documents**

## REFERENCE AND GUIDANCE DOCUMENTS

A Brief Guide to Mold in the Workplace, Occupational Safety Health Administration (OSHA), SHIB 03-10-10, updated 11-08-13

ANSI/IICRC S520 Standard and Reference Guide for Professional Mold Remediation, Institute of Inspection, Cleaning, and Restoration Certification, 2015.

ANSI/IICRC S500 Standard and Reference Guide for Professional Water Damage Restoration, Institute of Inspection, Cleaning, and Restoration Certification, 2015.

Bioaerosols: Assessment and Controls, American Conference of Governmental Industrial Hygienists, 1999.

Building Air Quality: A Guide for Building Owners and Facility Managers, EPA, EPA 402-F-91-102, December 1991

Centers for Disease Control and Prevention (CDC), <https://www.cdc.gov/mold/faqs.htm>

Department of Energy and the Environment (DOEE), Mold Assessment and Remediation Licensure Regulations.

EPA – Mold Resources, <https://www.epa.gov/mold>

Guidelines on Assessment and Remediation of Fungi in Indoor Environments, New York City Department of Health and Mental Hygiene, November 2008.

Mold Moisture and Your Home, EPA, EPA-402-K-02-003, September 2012

Mold Remediation in Schools and Commercial Buildings, EPA, EPA 402-K-01-001, September 2008