



February 26, 2021

Mr. Michael Emory, CPPB  
Director of Administrative Services  
Spartanburg County  
P.O. Box 5666  
Spartanburg, SC 29304

Reference: Report for Limited Indoor Air Quality (Mold) Clearance Assessment  
Spartanburg County Judicial Center  
Nine Office Spaces  
180 Magnolia Street, Spartanburg, South Carolina  
ECS Project Number 8192-A8

Dear Mr. Emory:

ECS Southeast, LLP (ECS) would like to thank you and is pleased to submit this limited indoor air quality (mold) clearance assessment report for the above referenced site. This report includes a description of our understanding of the project background information, a description of the scope of work performed, including our findings, conclusions, and recommendations.

#### **PROJECT INFORMATION**

The site is located at 180 Magnolia Street in Spartanburg, South Carolina in Rooms 1100H, 1100E, 801P, 801I, 801JJ, 650P, 650L, 650E and 650A of the Spartanburg County Judicial Center. ECS understands that fungal remediation was conducted by SERVPRO, a third-party mold remediation contractor, after elevated spore counts were previously identified. ECS was requested to conduct a Limited Indoor Air Quality (IAQ) mold clearance assessment of the interior of the identified areas following the completion of remediation activities. Project information is based on observations and conversations with Spartanburg County Facilities Personnel.

#### **ASSESSMENT ACTIVITIES**

ECS representative, Mr. Christopher M. Jackson, visited the subject site on February 14, 2021. ECS collected nine (9) indoor airborne fungal spore samples from the interior of the rooms undergoing remediation activities. Additionally, two (2) outdoor fungal spore samples were collected within the same time period as the samples collected on the interior of the structure to use for comparison purposes. Air sampling was conducted using Air-O-Cell® "spore-trap" air sampling media. A Buck BioAire™ model B520 high volume air sampling pump was calibrated to 15 liters per minute. Air sampling duration was 5 minutes at each of the sample locations. The outdoor samples were collected and used as reference to determine if indoor levels were unusually elevated or if unusual genera were present or predominant indoors. After collection, the samples were appropriately packaged and submitted to Southeast Environmental Microbiology Laboratories (SEEML) in Greenville, South Carolina for analysis of fungal spores. Proper chain of custody procedures were maintained throughout the sample collection and transportation process. A copy of the chain of custody is included in the attachments.

### Indoor Air Quality Analytical Data Discussion

The SEML report dated February 14, 2021 identifies the sample locations and presents a summary of fungal Genus identified for the samples.

**Table 1: Microbial Non-viable Air Sample Locations and Data, February 14, 2021 Site Visit**

Sample Location / Sample Type	Total Spore Count (spores/m <sup>3</sup> ) / Predominant Genus Identified
Outside by the Oak Tree Air-O-Cell	853 / <i>Ascospores</i>
Inside Room 1100 H Air-O-Cell	360 / <i>Basidiospores</i>
Inside Room 1100 E Air-O-Cell	None Detected
Inside Room 801 P Air-O-Cell	53 / <i>Penicillium</i> / <i>Aspergillus</i>
Inside Room 801 I Air-O-Cell	146 / <i>Ascospores</i> / <i>Basidiospores</i>
Inside Room 801 JJ Air-O-Cell	53 / <i>Penicillium</i> / <i>Aspergillus</i>
Inside Room 650 P Air-O-Cell	133 / <i>Ascospores</i> / <i>Basidiospores</i> <i>Penicillium</i> / <i>Aspergillus</i>
Inside Room 650 L Air-O-Cell	173 / <i>Ascospores</i>
Inside Room 650 E Air-O-Cell	160 / <i>Basidiospores</i>
Inside Room 650 A Air-O-Cell	280 / <i>Basidiospores</i> / <i>Cladosporium</i>
Inside Rear Entrance Lobby/Exterior Door Open (due to rain event) Air-O-Cell	1360 / <i>Ascospores</i> / <i>Basidiospores</i> <i>Penicillium</i> / <i>Aspergillus</i>

Based on the laboratory analysis of the air samples collected, the spore counts for the air samples collected from areas sampled, at the time of our visit, were not elevated or were comparable to exterior ambient samples. The laboratory analytical data and the chain of custody are attached to this report. To view analytical sample result details, see the Attachments Section.

### Indoor Comfort Parameters

Temperature, CO<sub>2</sub> levels, and relative humidity were measured during our assessment.

**Table 2: Indoor Comfort Parameters, Location and Data, February 14, 2021 Site Visit**

Sample Location	Temperature (°F)	CO <sub>2</sub> PPM	Relative Humidity (%)
Outside by Oak, in Mulch	44.6	374	64.3
Room 1100 H	55.2	484	61.5
Room 1100 E	56.5	477	55.6
Room 801 P	64.7	468	49.4
Room 801 I	67.5	463	44.0
Room 801 JJ	70.0	573	36.3
Room 650 P	69.5	461	41.2
Room 650 L	68.8	411	36.4
Room 650 E	70.9	454	35.6
Room 650 A	71.3	616	36.3
Inside Rear Entrance Lobby/Exterior Door Open (due to rain event)	42.4	350	61.2

Temperature, relative humidity, and carbon dioxide levels measured at the time of our assessment were generally acceptable. As cited by NIOSH, the *ANSI/ASHRAE Standard 55-2013: Thermal Environmental Conditions for Human Occupancy* specifies the combinations of indoor environmental and personal factors that produce acceptable thermal conditions to a majority of occupants within a space [ANSI/ASHRAE 2013b]. Assuming slow air movement (less than 40 feet per minute) and 50% indoor relative humidity, the operative temperatures recommended by ASHRAE range from 68.5°F to 75°F in the winter, and from 75°F to 80.5°F in the summer. The difference in temperature ranges between the seasons is largely due to clothing selection. ANSI/ASHRAE 62 also recommends that indoor carbon dioxide (CO<sub>2</sub>) levels be no higher than 700 parts per million (ppm) above the outdoor concentrations. ASHRAE recommends that indoor relative humidity be maintained at or below 65% [ANSI/ASHRAE 2013b]. USEPA recommends maintaining indoor relative humidity between 30% and 60% to reduce mold growth [EPA 2012].

## **CONCLUSIONS AND RECOMMENDATIONS**

Based on the laboratory analysis of the air samples collected, the spore counts for the samples collected from Rooms 1100H, 1100E, 801P, 801I, 801JJ, 650P, 650L, 650E and 650A at the time of our site visit, were not elevated or were comparable to exterior ambient samples. Also, building materials were considered dry at the time of the assessment. ECS has no further recommendations regarding fungal spore concentrations in the areas assessed at this time.

It should be noted that fungi and fungal spores are ubiquitous to the environment and concentrations are subject to substantial variation throughout the course of a typical day. Additionally, remediation of identified fungal material in a structure is not sufficient to ensure that amplification will not re-occur if moisture sources are not correctly identified and corrected prior to installation of new building finish materials.

## **REQUIREMENTS FOR MAINTAINING ACCEPTABLE INDOOR AIR QUALITY**

The key to preventing microbial contamination is moisture control. Below is a list of preventative measures to control moisture and assist in maintaining acceptable indoor air quality:

- Periodically perform O&M on the HVAC unit to include changing filters, cleaning coils, etc. according to the manufacturer's recommendations.
- Operate the HVAC within manufacturer's recommended guidelines.
- Respond to moisture intrusion events as soon as they are discovered.
- Identify and correct all moisture intrusion issues for the building.
- Confirm that exterior moisture intrusion concerns have been addressed.

## **QUALIFICATIONS OF REPORT**

Our testing protocols and recommendations are based on guidelines outlined in *Bioaerosols Assessment and Control*, dated 1999 prepared by the American Conference of Governmental Industrial Hygienists as well as the Institute of Inspection, Cleaning and Restoration (IICRC), *IICRC S520; Standard and Reference Guide for Professional Mold Remediation*. Please note that fungal spores are living organisms that require a source of water and carbon/cellulose based materials for growth. The most permanent long-term solution to prevent microbial recurrence is to eliminate and control water infiltration (moisture, excessive humidity, plumbing leaks, condensation, etc.) and to dry areas immediately (within 24 hours of occurrence) if water infiltration is detected or evident.

A reasonable effort was made to identify fungal spores, bacteria, and water impacted areas; however, this does not imply a guarantee that all possible reservoirs (growth or airborne) were identified because fungal spores or water-impacted building materials may be hidden by walls, flooring, partitions, etc. In addition, it should be noted that fungal spore growth may be present and amplified due to the presence of water-damaged building materials. During the remedial activities, if the extent of impact was grossly underestimated then ECS should be contacted to verify scope of work.

Observations were obtained without the use of destructive testing. Observations made of building conditions which may adversely affect indoor air quality within the building were made of building materials and or mechanical system components in plain view.

This report summarizes our evaluation of the conditions observed in the building on the day of testing. Our findings are based on observations at the site and analysis of a limited number of samples obtained in random locations. Conditions discovered which deviate from the data contained in this report or the specific fungal abatement objective should be presented to us for our evaluation.

The findings of this evaluation are not intended to serve as an audit of health and safety or compliance issues pertaining to improvements or activities on-site. ECS is not responsible or liable for the discovery and elimination of hazards that may potentially cause damage, accidents, or injuries.

### **LIMITATIONS**

Our observations and conclusions 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. ECS has not completed or used any form of predetermined language to report the conclusions of this work and it is our understanding that ECS will not be required to do so in any manner.

Information contained herein is based on information available to and data gathered by ECS during the performance of this project. Conclusions and recommendations pertaining to environmental conditions at the property are limited to the conditions observed and the materials sampled at the time this study was undertaken. 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. The sampling results only represent the locations at the time and day of collection.

ECS is not liable for the discovery and elimination of hazards that may potentially cause damage, accidents, injury, or disease. The conclusions and recommendations presented in this report are based on a reasonable level of evaluation within the normal bounds and standards of professional practice for an evaluation of this nature. The recommendations have no relationship to insurance coverage. This document is not a legal mandate and should be used as a guideline only.

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 addressee. The scope of services performed in the execution of this evaluation may not be appropriate to satisfy the needs of other users. This report is not intended to be used or relied upon in connection with other projects or by other unidentified third parties. The use of this report or the findings, conclusions, or recommendations by an undesignated third party or parties will be at such party's sole risk and ECS disclaims liability for such third party's use or reliance.

Report of Indoor Air Quality Mold Clearance Assessment  
Spartanburg County Judicial Center  
180 Magnolia Street  
Spartanburg, Spartanburg County, South Carolina  
ECS Project Number 49-8192-A8  
February 26, 2021

ECS appreciates the opportunity to provide our environmental services for this project. If you have questions or need additional information, please contact us.

Sincerely,

**ECS SOUTHEAST, LLP** as represented by:



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Attachments: Laboratory Data & Chain of Custody