Discovery Post Remediation Clearance Report

Project Contact Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Company</th>
<th>Address</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sam Stefanelli</td>
<td>Prince Georges County Public Schools</td>
<td>13300 Old Marlboro Pike, Trailer #5</td>
<td>(410) 867-6262</td>
<td><a href="mailto:sam.stefanelli@pgcps.org">sam.stefanelli@pgcps.org</a></td>
</tr>
<tr>
<td>Alex Baylor</td>
<td>Environmental Specialists</td>
<td>13306 Old Marlboro Pike</td>
<td></td>
<td><a href="mailto:alex.baylor@pgcps.org">alex.baylor@pgcps.org</a></td>
</tr>
<tr>
<td>Vinny Gigliotti</td>
<td>Environmental Solutions Inc.</td>
<td>6114 Drum Point Road</td>
<td>(410) 867-6262</td>
<td><a href="mailto:vinny@esi4u.com">vinny@esi4u.com</a></td>
</tr>
</tbody>
</table>

Property Location

6001 Carters Lane Riverdale, MD

Date of Inspection 1/8/2019

Prepared By: Vinny Gigliotti

Certified Indoor Environmentalist (CIE)
Dear Sam,

The results of the post remediation inspection and testing performed at Templeton Elementary School are concluded and the findings are enclosed. I want to thank you for allowing ESI the opportunity to service your indoor environmental needs.

Included in this report are the observations, instrument readings, lab results, and recommendations for any areas inspected and or tested that need additional cleaning or remediations. Several photographs illustrating the problematic conditions are attached.

**Background Information**
The school was first inspected and tested by ESI on November 8, 2018, and ESI returned to the school on January 8, 2019, to conduct a post remediation inspection and testing. The purpose of this post remediation inspection and testing is to determine if the areas remediated were properly cleaned and that NO health or environmental risk are present. If any problematic conditions are detected, then ESI will make recommendations for corrective actions to be implemented by the PGCPS Environmental Team.

**Observations and instrument readings**

<table>
<thead>
<tr>
<th>Location</th>
<th>IAQ Sample #</th>
<th>R/H</th>
<th>Temp</th>
<th>CO2</th>
<th>Co</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tempo # 5</td>
<td>2395534</td>
<td>57%</td>
<td>64</td>
<td>454</td>
<td>001</td>
<td></td>
</tr>
</tbody>
</table>

**Observations**
- There were NO signs of mold growth or elevated levels of moisture detected within this location. However, there were 5 new water stains in the ceiling tiles.
- The remediation and cleaning efforts were completed successfully, and the indoor air quality should pose no health or environmental risk.

**Recommendations**
- Fix the roof leaks.
- Remove and replace the 5 water damaged ceiling tiles.

<table>
<thead>
<tr>
<th>Location</th>
<th>IAQ Sample #</th>
<th>R/H</th>
<th>Temp</th>
<th>CO2</th>
<th>Co</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tempo # 6</td>
<td>2395532</td>
<td>44</td>
<td>71</td>
<td>525</td>
<td>001</td>
<td></td>
</tr>
</tbody>
</table>

**Observations**
- There were NO signs of mold growth or elevated levels of moisture detected within this location. However, there were 7 new water stains in the ceiling tiles.
- The remediation and cleaning efforts were completed successfully, as there were no visible signs of mold and/or an accumulation of dust and debris that would harbor mold spores. However, the spore count for Basidiospores was elevated and may pose an exposure risk to the occupants of Tempo #6. It is important for the readers of this report to understand that the outside spore count was 4,640 and the inside spore count was 2,320 per cubic meter of air. When the door was open to gain access to the building, the wind was blowing quite hard, which may have amplified the indoor spore count.

**Recommendations**
- Fix the roof leaks.
- Remove and replace 7 water damaged ceiling tiles.
- Engage HEPA filtered air scrubbers within this location.
<table>
<thead>
<tr>
<th>Location</th>
<th>IAQ Sample #</th>
<th>R/H</th>
<th>Temp</th>
<th>CO2</th>
<th>Co</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tempo # 4</td>
<td>235526</td>
<td>39</td>
<td>70</td>
<td>569</td>
<td>000</td>
<td></td>
</tr>
</tbody>
</table>

**Observations**
- There were NO signs of mold growth or elevated levels of moisture detected within this location. However, there were 3 new water stains in the ceiling tiles.
- The remediation and cleaning efforts were completed successfully, and the indoor air quality should pose no health or environmental risk.

**Recommendations**
- Remove and replace the 3 water damaged ceiling tiles.

<table>
<thead>
<tr>
<th>Location</th>
<th>IAQ Sample #</th>
<th>R/H</th>
<th>Temp</th>
<th>CO2</th>
<th>Co</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>L-5</td>
<td>2395528</td>
<td>23</td>
<td>69</td>
<td>456</td>
<td>000</td>
<td></td>
</tr>
</tbody>
</table>

**Observations**
- There were NO signs of mold growth or elevated levels of moisture detected within this location.
- The remediation and cleaning efforts were completed successfully, and the indoor air quality should pose no health or environmental risk.

**Recommendations**
- NONE

<table>
<thead>
<tr>
<th>Location</th>
<th>IAQ Sample #</th>
<th>R/H</th>
<th>Temp</th>
<th>CO2</th>
<th>Co</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>L-1</td>
<td>2395530</td>
<td>26</td>
<td>71</td>
<td>474</td>
<td>002</td>
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</tbody>
</table>

**Observations**
- There were NO signs of mold growth or elevated levels of moisture detected within this location.
- The remediation and cleaning efforts were completed successfully, and the indoor air quality should pose no health or environmental risk.

**Recommendations**
- NONE
### Observations

- There were NO signs of mold growth or elevated levels of moisture detected within this location.
- The sink had dark spots, and I collected a swab culture to be analyzed. The lab results indicated NO FUNGI detected.
- The remediation and cleaning efforts were completed successfully, and the indoor air quality should pose no health or environmental risk.

### Recommendations

NONE

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### Observations

- There were NO signs of mold growth or elevated levels of moisture detected within this location.
- The sink had dark spots, and I collected a swab culture to be analyzed. The lab results indicated NO FUNGI detected.
- The remediation and cleaning efforts were completed successfully, and the indoor air quality should pose no health or environmental risk.

### Recommendations

NONE

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### Observations

- There were NO signs of mold growth or elevated levels of moisture detected within this location.
- Although the teachers’ lounge was visibly clean, there were elevated levels of mold spores within the breathable air space. The Aspergillus / Penicillium was at 1,760 spores per cubic meter of air and the Basidiospores was at 1,440.

### Recommendations

- Damp wipe all horizontal surfaces with BENEFECT or equivalent.
- Engage HEPA filtered air scrubbers within this location for approximately 8 hours, then fog the breathable air space with BENEFECT or equivalent.
Conclusions

In concluding the post remediation inspection and testing of Templeton Elementary School, only two of the areas tested did not pass the indoor air quality test. Those two areas are the Teachers’ lounge and Tempo #6, which are highlighted in red. The spore count in both theses rooms exceeded 2,000 spores per cubic meter of air. The other test locations did not exceed 2,000 spores per cubic meter, which is considered clean as indicated below.

**Typical Indoor Mold Spore Concentration - According to the EAA (Environmental Analysis Associates)**

<table>
<thead>
<tr>
<th>Description</th>
<th>Spores/Cubic Meter</th>
<th>Predominant Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Clean&quot; building</td>
<td>less than 2,000</td>
<td>Total for all spore types</td>
</tr>
<tr>
<td></td>
<td>less than 1,000</td>
<td>Penicillium, Aspergillus</td>
</tr>
<tr>
<td>Possible Indoor Amplification</td>
<td>1,000 - 5,000</td>
<td>Penicillium, Aspergillus, Cladosporium</td>
</tr>
<tr>
<td>Indoor Amplification likely</td>
<td>5,000 - 10,000</td>
<td>Penicillium, Aspergillus, Cladosporium</td>
</tr>
<tr>
<td>Chronic Indoor Amplification</td>
<td>10,000 - 500,000</td>
<td>Penicillium, Aspergillus, Cladosporium</td>
</tr>
<tr>
<td>Inadequate flood cleanup or indoor demolition of</td>
<td>50,000 - 10,000,000</td>
<td>Penicillium, Aspergillus, Stachybotrys, Cladosporium</td>
</tr>
<tr>
<td>surfaces</td>
<td></td>
<td>Tricoderma, Ulocladium, Basiomycetes</td>
</tr>
</tbody>
</table>

Everyone breathes in thousands of mold spores daily in all environments. ESI uses the air quality of the outside as a baseline sample to support or test hypotheses of contamination and remediation issues. Above all, the visual and olfactory observations of an indoor environmental professional are paramount and may supersede any questionable sampling results.

I hope you found our service beneficial. If you have any questions or concerns, please feel free to contact me at 301-509-0010 which my cell phone and or call my office at 410-867-6262.

Respectfully,

Vinny Gigliotti (CIE)
Environmental Solutions, Inc.
Lab Results

In the enclosed Air Cassette Analysis report, you will notice Fungal Identification, which is the species detected in the breathable airspace inside, and outside. The Raw count is the actual number of spores counted on the slide, and the Count/m³ are the spores per cubic meter of air. The other particles are non-living particles such as dander, mycelial fragments, pollens, etc…

In order for humans to be exposed indoors, fungal spores, fragments, or metabolites must be released into the air and inhaled, physically contacted (dermal exposure), or ingested. Whether symptoms develop in people exposed to fungi depends on the nature of the fungal material (e.g., allergenic, toxic, or infectious), the amount of exposure, and the susceptibility of exposed persons.

Susceptibility varies with genetic predisposition (e.g., allergic reactions do not always occur in all individuals), age, state of health, and concurrent exposures.
## Air Cassette Analysis

<table>
<thead>
<tr>
<th>Sample ID Number</th>
<th>19001277-009</th>
<th>19001277-009</th>
<th>19001277-009</th>
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<tr>
<td>Analysis Using STE</td>
<td>10TC</td>
<td>10TC</td>
<td>10TC</td>
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<tr>
<td>Sample Number</td>
<td>2196529</td>
<td>2396529</td>
<td>2396529</td>
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<tr>
<td>Sample Type</td>
<td>Air Cassette - Micro-5</td>
<td>Air Cassette - Micro-5</td>
<td>Air Cassette - Micro-5</td>
</tr>
<tr>
<td>Volume</td>
<td>25 L</td>
<td>25 L</td>
<td>25 L</td>
</tr>
<tr>
<td>Analytical Sensitivity</td>
<td>40 CFU/L</td>
<td>40 CFU/L</td>
<td>40 CFU/L</td>
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<tr>
<td>Background Density</td>
<td>2</td>
<td>3</td>
<td>2</td>
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</table>

### Spacer Description

<table>
<thead>
<tr>
<th>Category</th>
<th>Raw Count</th>
<th>Count/ML</th>
<th>%</th>
<th>Raw Count</th>
<th>Count/ML</th>
<th>%</th>
<th>Raw Count</th>
<th>Count/ML</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dander</td>
<td>11</td>
<td>440</td>
<td>n/a</td>
<td>22</td>
<td>860</td>
<td>n/a</td>
<td>12</td>
<td>400</td>
<td>n/a</td>
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<tr>
<td>Fliers</td>
<td>2</td>
<td>80</td>
<td>n/a</td>
<td>2</td>
<td>80</td>
<td>n/a</td>
<td>2</td>
<td>80</td>
<td>n/a</td>
</tr>
<tr>
<td>Mycotic Fragments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Mycotic Fragments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspergillus/Penicillium</td>
<td>1</td>
<td>40</td>
<td>7</td>
<td>44</td>
<td>1792</td>
<td>53</td>
<td>17</td>
<td>690</td>
<td>12</td>
</tr>
<tr>
<td>Bacillus</td>
<td>12</td>
<td>600</td>
<td>80</td>
<td>68</td>
<td>5680</td>
<td>43</td>
<td>115</td>
<td>9000</td>
<td>61</td>
</tr>
<tr>
<td>Cladosporium species</td>
<td>2</td>
<td>80</td>
<td>13</td>
<td>3</td>
<td>120</td>
<td>4</td>
<td>6</td>
<td>240</td>
<td>4</td>
</tr>
<tr>
<td>Spirilla/Mycospor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>18</td>
<td>600</td>
<td>83</td>
<td>5320</td>
<td></td>
<td></td>
<td>143</td>
<td>8720</td>
<td></td>
</tr>
</tbody>
</table>

**Signature:**

*Date: 1/10/2019*

**Reviewed:**

*Date: 1/11/2019*
Direct Identification Analysis

SanAir ID: 19001277-007  Sample #: Swab  B-220 Sink Cabinet
D1 - Direct Identification Analysis on Surface Swab using STL 104
Direct ID of Mold
Fungi  Estimated Amount
No Fungi Detected

SanAir ID: 19001277-008  Sample #: Swab  B-221 Sink Cabinet
D1 - Direct Identification Analysis on Surface Swab using STL 104
Direct ID of Mold
Fungi  Estimated Amount
No Fungi Detected

<table>
<thead>
<tr>
<th>Estimated Amount</th>
<th>Indication of Growth</th>
<th>Evidence of Mycelial Fragments/Conidiophores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rare</td>
<td>Not Likely</td>
<td>None</td>
</tr>
<tr>
<td>Light</td>
<td>Possible</td>
<td>Sparse, 10 to 25% of Tape Covered</td>
</tr>
<tr>
<td>Moderate</td>
<td>Probable</td>
<td>Abundant, 25 to 50% of Tape Covered</td>
</tr>
<tr>
<td>Heavy</td>
<td>Significant</td>
<td>Throughout, 50 to 100% of Tape Covered</td>
</tr>
</tbody>
</table>

*Refer to additional information page for further details

Signature:  
Date: 1/10/2019

Reviewed:  
Date: 1/11/2019
Organism Descriptions

The descriptions of the organisms presented are derived from various reference materials. The laboratory report is based on the data derived from the samples submitted and no interpretation of the data. As to potential, or actual, health effects resulting from exposure to the numbers of organisms found, can be made by laboratory personnel. Any interpretation of the potential health effects of the presence of this organism must be made by qualified professional personnel with first hand knowledge of the sample site, and the problems associated with that site.

Dander - Comprised of human and/or animal skin cells. Counts may be higher in carpeted rooms and in rooms with more traffic. **Health Effects:** May cause allergies.

Fibers - This category can include clothing, carpet, and insulation fibers.

**Mycelial Fragments** - A mycelium (plural = mycelia) is the "body" of a fungus. It is a collective term for hyphae (singular = hypha), which are the tubular units of the mycelium usually composed of chitin. The terms hyphae and mycelial fragments are used interchangeably. In some cases a fungal identification cannot be obtained due to lack of sporulation. Only the mycelial fragments are present, and cannot be identified without the distinguishing characteristics of the spores or the structures they grow from. **Health Effects:** Allergic reactions may occur in the presence of spores (conidia) or mycelial/hyphal fragments.

Ascosporas - From the fungal Subphylum Ascomycodina. Ascosporas are ubiquitous in nature and are commonly found in the outdoor environment. This class contains the "sac fungi" and yeasts. Some ascosporas can be identified by spore morphology, however, some care should be exercised with regard to specific identification. They are identified on tape lifts and non-viable analysis by the fact that they have no attachment scars and are sometimes enclosed in sheaths with or without sacs. Ascomycetes may develop both sexual and asexual stages. Rain and high humidity may help asc to release, and disperse ascosporas, which is why during these weather conditions there is a great increase in counts. **Health Effects:** This group contains possible allergens.

Aspergillus/Penicillium - These spores are easily aerosolized. Only through the visualization of reproductive structures can the genera be distinguished. Also included in this group are the spores of the genera Acroconium, Phialophora, Verticillium, Paecilomyces, etc. Small, round spores of this group lack the necessary distinguishing characteristics when seen on non-viable examination. **Health Effects:** Can cause a variety of symptoms including allergic reactions. Most symptoms occur if the individual is immunocompromised in some way (HIV, cancer, etc). Both Penicillium and Aspergillus spores share similar morphology on non-viable analysis and therefore are lumped together into the same group.

Basidiomycotes - From the Subphylum Basidiomycotina which contains the mushrooms, shelf fungi, and a variety of other macrofungi. They are saprophytes, ectomycorrhizal fungi or agents of wood rot, which may destroy the structure wood of buildings. It is extremely difficult to identify a specific genus of mushrooms by using standard culture plate techniques. Some basidiomycete spores can be identified by spore morphology; however, some care should be exercised with regard to specific identification. The release of basidiomycotes is dependant upon moisture, and they are dispersed by wind. **Health Effects:** Many have the potential to produce a variety of toxins. Members of this group may trigger Type I and III fungal hypersensitivity reactions. Rarely reported as opportunistic pathogens.
Organism Descriptions

The descriptions of the organisms presented are derived from various reference materials. The laboratory report is based on the data derived from the samples submitted and no interpretation of the data, as to potential, or actual, health effects resulting from exposure to the numbers of organisms found, can be made by laboratory personnel. Any interpretation of the potential health effects of the presence of this organism must be made by qualified professional personnel with first hand knowledge of the sample site, and the problems associated with that site.

Cladosporium species - The most commonly identified outdoor fungus. The outdoor numbers are reduced in the winter and are often high in the summer. Often found indoors in numbers less than outdoor numbers. It is commonly found on the surface of fiberglass duct liner in the interior of supply ducts. A wide variety of plants are food sources for this fungus. It is found on dead plants, woody plants, food, straw, soil, paint and textiles. Often found in dirty refrigerators and especially in reservoirs where condensation is collected, on mold window frames it can easily be seen covering the whole painted area with a velvety olive green layer. 

Health Effects: It is a common allergen. It can cause mycosis. Common cause of extrinsic asthma (immediate-type hypersensitivity; type I). Acute symptoms include edema and bronchospasms, chronic cases may develop pulmonary emphysema. Illnesses caused by this genus can include phaeohyphomycosis, chromoblastomycosis, hay fever and common allergies.


Smuts/Myxomycetes - Smuts and Myxomycetes are parasitic plant pathogens. They are typically grouped together due to their association with plants, the outdoors and because they share similar microscopic morphology. 

Health Effects: Can produce type I fungal hypersensitivity reactions.

Industry References
Since the 1993 New York City Department of Health (NYCDOH) document (Assessment and Remediation of Stachybotrys Atra in Indoor Environments) was produced, several other guidance documents have been written. This report was developed in accordance with and including:

- *Control of Moisture Problems Affecting Biological Indoor Air Quality* (Flannigan and Morey, 1996).
- *Guidelines on Assessment and Remediation of Fungi in Indoor Environments* (NYCDOH, 2000).
- 40 CFR 61, National Emission Standards for Hazardous Air Pollutants (NESHAP), U.S. Environmental Protection Agency
- ACR 2006, Assessment, Cleaning and Restoration of HVAC Systems, National Air Duct Cleaners Association, 2006*
- ASHRAE Standards 62.1 or 62.2
- *Bioaerosols: Assessment and Control*, American Conference of Governmental Industrial Hygienists, 1999
- *Field Guide for Determination of Biological Contaminants in Environmental Samples*, American Industrial Hygiene Association, 2005