ESI Environmental Solutions, Inc.

www.esi4u.com (410)-867-6262

Discovery Post Remediation Clearance Report

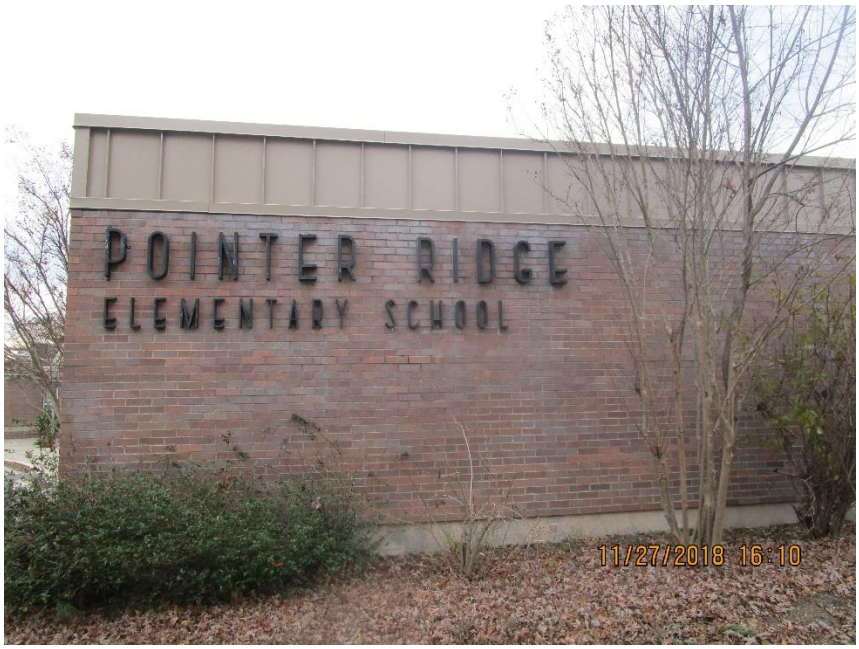
Project Contact Information

Sam Stefanelli Prince Georges County Public Schools 13300 Old Marlboro Pike, Trailer #5 Upper Marlboro, MD 20772 sam.stefanelli@pgcps.org	Alex Baylor Environmental Specialists Prince Georges County Public Schools 13306 Old Marlboro Pike Upper Marlboro, MD alex.baylor@pgcps.org	Vinny Gigliotti Environmental Solutions Inc. (410) 867-6262 6114 Drum Point Road Deale, MD 20751 vinny@esi4u.com

Property Location

1110 Parkington Lane, Bowie, MD 20716

Date of Inspection 1/24/2018



Prepared By: Vinny Gigliotti

Certified Indoor Environmentalist (CIE)

Dear Sam and Alex,

The results of the post remediation inspection and testing performed at Pointer Ridge Elementary School, located at 1110 Parkington Lane, Bowie, MD 20716, 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 on 11/27/2018, and ESI returned to the school on 1/24/19 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

Location	IAQ Sample #	R/H	Temp	CO2	Co	Other
Room 4 Wing 4	2368347	30	72	443	000	
Observations						
• There were NO visible 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						

Location	IAQ Sample #	R/H	Temp	CO2	Co	Other
Room 2 Wing 5	2358345	33	71	345	001	
Observations						
• There were NO visible 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						

Location	IAQ Sample #	R/H	Temp	CO2	Co	Other
Room 5 Wing 3	2358346	23	73	546	001	
Observations						
• There were NO visible 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						

Location	IAQ Sample #	R/H	Temp	CO2	Co	Other
Room 3 Wing 3	2358343	32	73	345	000	
Observations						
• There were NO visible signs of mold growth or elevated levels of moisture detected within this location. • The indoor air quality had elevated levels of Aspergillus/Penicillium at 1,120 spores per cubic meter of air. This is slightly elevated and could be reduced by simply engaging a 1000 cfm HEPA filtered air scrubber in this classroom for approximately 4-6 hours.						
Recommendations						
• Engage HEPA filtered air scrubber.						

Location	IAQ Sample #	R/H	Temp	CO2	Co	Other
Room 6 Wing 1	2358344	40	66	473	001	
Observations						
• There were NO visible 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						

Conclusions/Recommendations

Once I concluded the visual inspection and didn't see any residual mold growth or contributing factors as to why mold would recolonize, I collected indoor air quality samples of microbial and biological contaminates to be analyzed by an independent laboratory. The samples in this report indicate a normal fungal ecology for each location tested except for Room 3 Wing 3. Therefore, the indoor air quality passed all the test locations, except for Room 3 Wing 3.

Based on the visual inspection and the lab results, there are no health or environmental risks related to the remediation areas of the school. (Please refer to the attached lab results below for identification and spore count per location.)

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.

Interpretation of 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.

SanAir Technologies Laboratory

Name: Environmental Solutions, Inc
Address: 534-A Deale Road
Deale, MD 20751
Phone: 410-867-6262

Project Number: 1110
P.O. Number: VJG
Project Name: Pointer Ridge ES
Collected Date: 1/24/2019
Received Date: 1/30/2019 8:00:00 AM

SanAir ID Number
19004178
FINAL REPORT
1/30/2019 11:54:35 AM

Analyst: Smith, Kiersten

Air Cassette Analysis

ND = None Detected. Blank spaces indicate no spores detected.

SanAir ID Number	19004178-001			19004178-002			19004178-003			19004178-004		
Analysis Using STL	107C			107C			107C			107C		
Sample Number	2368347			2358345			2358346			2358343		
Sample Identification	Room 4 Wing 4			Room 2 Wing 5			Room 5 Wing 3			Room 3 Wing 3		
Sample Type	Air Cassette - Micro-5			Air Cassette - Micro-5			Air Cassette - Micro-5			Air Cassette - Micro-5		
Volume	25 Liters			25 Liters			25 Liters			25 Liters		
Analytical Sensitivity	40 Count/M³			40 Count/M³			40 Count/M³			40 Count/M³		
Background Density	1+			1+			1+			2		
Other	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**
Dander	13	520	n/a	5	200	n/a	15	600	n/a	47	1880	n/a
Fibers	3	120	n/a	2	80	n/a	3	120	n/a	4	160	n/a
Fungal Identification	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**
Ascospores							1	40	7	1	40	2
Aspergillus/Penicillium	2	80	>99	5	200	50	4	160	27	28	1120	61
Basidiospores				4	160	40	6	240	40	4	160	9
Cladosporium species				1	40	10	4	160	27	12	480	26
Epicoccum species												
Stachybotrys species										1	40	2
TOTAL	**2**	**80**		**10**	**400**		**15**	**600**		**46**	**1840**	

Signature: K. Smith Date: 1/30/2019 Reviewed: Johnathan Wilson Date: 1/30/2019

SanAir Technologies Laboratory

Name: Environmental Solutions, Inc
Address: 534-A Deale Road
Deale, MD 20751
Phone: 410-867-6262

Project Number: 1110
P.O. Number: VJG
Project Name: Pointer Ridge ES
Collected Date: 1/24/2019
Received Date: 1/30/2019 8:00:00 AM

SanAir ID Number
19004178
FINAL REPORT
1/30/2019 11:54:35 AM

Analyst: Smith, Kiersten

Air Cassette Analysis

ND = None Detected. Blank spaces indicate no spores detected.

SanAir ID Number	19004178-005			19004178-006				
Analysis Using STL	107C			107C				
Sample Number	2358344			2358341				
Sample Identification	Room 6 Wing 1			Outside				
Sample Type	Air Cassette - Micro-5			Air Cassette - Micro-5				
Volume	25 Liters			25 Liters				
Analytical Sensitivity	40 Count/M³			40 Count/M³				
Background Density	1+			1+				
Other	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**		
Dander	20	800	n/a	39	1560	n/a		
Fibers	1	40	n/a	2	80	n/a		
Fungal Identification	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**		
Ascospores				2	80	10		
Aspergillus/Penicillium	6	240	75	3	120	15		
Basidiospores	2	80	25	13	520	65		
Cladosporium species				1	40	5		
Epicoccum species				1	40	5		
Stachybotrys species								
TOTAL	**8**	**320**		**20**	**800**			

Signature: K. Smith Date: 1/30/2019 Reviewed: Jonathan Wilson Date: 1/30/2019

SanAir ID Number
19004178
FINAL REPORT
1/30/2019 11:54:35 AM

Name: Environmental Solutions, Inc
Address: 534-A Deale Road
Deale, MD 20751
Phone: 410-867-6262

Project Number: 1110
P.O. Number: VJG
Project Name: Pointer Ridge ES
Collected Date: 1/24/2019
Received Date: 1/30/2019 8:00:00 AM

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.

Ascospores - From the fungal Subphylum Ascomycotina. Ascospores are ubiquitous in nature and are commonly found in the outdoor environment. This class contains the "sac fungi" and yeasts. Some ascospores can be identified by spore morphology, however; some care should be excercised 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 asci to release, and dispurse ascospores, 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 Acremonium, 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.

Basidiospores - 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 genera 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 basidiospores 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.

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 moist 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 bronchiospasms, chronic cases may develop pulmonary emphysema. Illnesses caused by this genus can include phaeohyphomycosis, chromoblastomycosis, hay fever and common allergies.
References: Flannigan, Brian, Robert A. Samson, and J. David Miller, eds. Microorganisms in Home and Indoor Work Environments: Diversity, Health Impacts, Investigation, and Control. London and New York: Taylor & Francis, 2001.

SanAir ID Number
19004178
FINAL REPORT
1/30/2019 11:54:35 AM

Name: Environmental Solutions, Inc
Address: 534-A Deale Road
Deale, MD 20751
Phone: 410-867-6262

Project Number: 1110
P.O. Number: VJG
Project Name: Pointer Ridge ES
Collected Date: 1/24/2019
Received Date: 1/30/2019 8:00:00 AM

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.

Epicoccum species - It is found in plants, soil, grains, textiles, and paper products. Frequently isolated from air and occasionally occurs in house dust. Is a saprophyte and considered a weakly parasitic secondary invader of plants, moldy paper and textiles. Epicoccum is usually isolated with either Cladosporium species or Aureobasidium species.
Health Effects: A common allergen. It also has the potential to produce type I fungal hypersensitivity reactions.
References: Flannigan, Brian, Robert A. Samson, and J. David Miller, eds. Microorganisms in Home and Indoor Work Environments: Diversity, Health Impacts, Investigation, and Control. London and New York: Taylor & Francis, 2001.

Stachybotrys species - This organism is rarely found in outdoor samples. It is usually difficult to find in indoor air samples unless it is physically disturbed because the spores are in a gelatinous mass. Grows well on wet media, preferably containing cellulose. It proliferates in the indoor environment with long term water damage, growing on wallpaper, gypsum board, and textiles. As a general rule, air cultures for Stachybotrys yields unpredictable results, mainly due to the fact that this fungus is usually accompanied by other fungi such as Aspergillus and Penicillium that normally are better aerosolized than Stachybotrys. This is a slow growing fungus on media. It does not compete well with other rapidly growing fungi. The black fungi grow on building material with high cellulose content and low nitrogen content. Appropriate media for the growth of this organism will have high cellulose content and low nitrogen content.
Health Effects: It has worldwide distribution and has been reported to cause dermatitis, cough, rhinitis, and headache, although no definitive reports of human infections have been verified. It has the ability to cause type I hypersensitivity. It is a documented mycotoxin producer.
References: Flannigan, Brian, Robert A. Samson, and J. David Miller, eds. Microorganisms in Home and Indoor Work Environments: Diversity, Health Impacts, Investigation, and Control. London and New York: Taylor & Francis, 2001.

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:

- *Fungal Contamination in Buildings: A Guide to Recognition and Management* (Health Canada, 1995).
- *Control of Moisture Problems Affecting Biological Indoor Air Quality* (Flannigan and Morey, 1996).
- *Bioaerosols: Assessment and Control* (American Conference of Government Industrial Hygienists [ACGIH], 1999).
- *Guidelines on Assessment and Remediation of Fungi in Indoor Environments* (NYCDOH, 2000). [external link]
- *Mold Remediation in Schools and Commercial Buildings* (U.S. EPA, 2001).
- *Report of the Microbial Growth Task Force* (The American Industrial Hygiene Association, 2001).
- *Fungal Contamination: A manual for investigation, remediation and control (BECi) 2005*.
- *29 CFR 1910, Occupational Safety and Health Standards for General Industry, U.S. Department of Labor*
- Institute of Inspection, Cleaning and Restoration Certification Standard IICRC S520 *29 CFR 1926, Occupational Safety and Health Standards for the Construction Industry*, U.S. Department of Labor
- *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*
- *ASTM D-1653, Standard Test Methods for Water Vapor Transmission of Organic Coating Films*
- *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*
- *A Guide for Mold Remediation in Schools and Commercial Buildings, US Environmental Protection Agency, 2001 Protecting the Built Environment: Cleaning for Health, Michael A. Berry Ph.D., 1993*
- *IICRC S100 Standard and Reference Guide for Professional Carpet Cleaning, Fourth Edition, Institute of Inspection, Cleaning and Restoration Certification, (S100)**
- *IICRC S300 Standard and Reference Guide for Professional Upholstery Cleaning, First Edition, Institute of Inspection, Cleaning and Restoration Certification, (S300)**
- *ANSI/IICRC S500 Standard and Reference Guide for Professional Water Damage Restoration, Third Edition, Institute of Inspection, Cleaning and Restoration Certification, (S500)**