ESI Environmental Solutions, Inc.

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

Discovery Environmental Inspection Report

Project Contact Information

Alex Baylor Environmental Specialists Environmental Safety Office 13306 Old Marlboro Pike Upper Marlboro, MD 20772 301-952-6760 alex.baylor@pgcps.org	Samuel Massie Academy 97,243Ft^2	Vinny Gigliotti Certified Indoor Environmentalist Environmental Solutions, Inc. 6114 Drum Point Rd Deale, MD 20751 410-867-6262 Vinny@esi4u.com

Property Location

3301 Regency Parkway Forestville, MD 20747

Date of Inspection: 3/18/2019

Prepared By: Vinny Gigliotti & Ryan Fitzgerald

Dear Mr. Baylor,

The results of the inspection and testing performed at Samuel Massie Academy 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, lab results, and recommendation from ESI's 3/18/2019 inspection and testing.

Background Information

The Prince Georges County Public School Environmental Team has taken a proactive approach in cleaning the above-mentioned school to ensure there are no health or environmental risks related to microbial and biological hazards. Historically elevated levels of humidity, condensation from pipes, periodic steam leaks and outdated HVAC systems, may have contributed to water damage ceiling tiles and colonization of mold spores in various area of the school.

Purpose

ESI was engaged to inspect the school in a random sufficient manner. Classrooms, administration offices, and common area building materials and contents, will be visually inspected for water damage and microbial growth.

In each location inspected, the indoor air quality will be tested for elevated levels of carbon dioxide and carbon monoxide, in addition to measuring the relative humidity and temperature. Microbial / biological hazards within the breathable air space will also be tested.

Based upon the visual assessment, instrument readings and lab results, ESI will determine if additional remediation in required.

Observations and instrument readings

The following table is designed for this project. Some of the fields may not be filled in due to not being applicable during the time of the inspection. You will notice either a 'YES' or 'NO' in the table. 'YES' indicates that mold and /or water damage was detected and 'NO' indicates it was not. If 'YES' is noted, remediation recommendation will be included for the area inspected. Please note that the cubic feet of air in the rooms inspected is an approximate number.

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
Room #G100	2377200	N/A	18.5	69.8	607	000	8,315	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	**Windows**
2x4	CMU	1	20	1	5	0	4	4
No	No	No	No	No	No	N/A	No	No

Observation Notes

- Accumulations of dust were seen on the diffusors.
- The indoor air quality should not pose environmental or exposure risks at these levels. The total spore count was 200 Count/M^3 and no elevated levels of Carbon monoxide or Carbon dioxide were detected.

Recommendations

None

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
Room #G104	2377195	N/A	21.8	70.3	625	000	8,020	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	**Windows**
2x4	CMU	1	23	4	5	0	4	4
No	No	No	No	No	No	N/A	No	No

Inspected

- Light accumulations of dust were seen on the diffusors.
- The indoor air quality should not pose environmental or exposure risks at these levels. The total spore count was 920 Count/M^3 and no elevated levels of Carbon monoxide or Carbon dioxide were detected.

Recommendations

None

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
Room #G115	2377205	N/A	18.2	70.3	581	000	8,325	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	Windows
2x4	CMU	2	30	3	6	0	4	4
No	No	No	No	No	No	N/A	No	No
Observation Notes								

- The ceiling tiles were sagging
- Accumulations of dust was seen on the diffusors.
- The indoor air quality should not pose environmental or exposure risks at these levels. The total spore count was 1,040 Count/M^3 and no elevated levels of Carbon monoxide or Carbon dioxide were detected.

Recommendations

- Monitor the relative humidity during warm/humid summer months to prevent the ceiling tiles from sagging.

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
Room #F105	2377210	N/A	20.1	71.4	834	000	8,090	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	**Windows**
2x4	CMU	1	24	1	5	0	4	4
No	No	No	No	No	No	N/A	No	No
Observation Notes								

- Light accumulations of dust were seen on diffusors.
- Grime and dirt were seen on the base of the sink cabinetry.
- The indoor air quality should not pose environmental or exposure risks at these levels. The total spore count was 720 Count/M^3 and no elevated levels of Carbon monoxide or Carbon dioxide were detected.

Recommendations

None

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
Room #F108	2377180	N/A	18.4	68.0	573	000	7,775	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	**Windows**
2x4	CMU	1	26	1	5	0	4	4
No	No	No	No	No	No	N/A	No	No

Observation Notes

- The ceiling tiles were sagging.
- Light accumulations of dust were seen on the diffusors.
- The indoor air quality should not pose environmental or exposure risks at these levels. The total spore count was 440 Count/M^3 and no elevated levels of Carbon monoxide or Carbon dioxide were detected.

Recommendations

None

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
Room #E105	2377194	N/A	21.2	70.1	623	000	7,810	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	**Windows**
2x2	CMU	1	33	1	4	0	4	4
No	No	No	No	No	No	N/A	No	No

Observation Notes

- Light accumulations of dust were seen on the diffusors.
- The indoor air quality should not pose environmental or exposure risks at these levels. The total spore count was 440 Count/M^3 and no elevated levels of Carbon monoxide or Carbon dioxide were detected.

Recommendations

None

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
Room #A120	2377185	N/A	17.3	72.3	558	000	20,750	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	**Windows**
2x4	CMU	0	0	12	5	0	4	2
Yes	No	N/A	N/A	No	No	N/A	No	No

Observation Notes

- Three ceiling tiles were water stained.
- Accumulations of dust were on the diffusors.
- The indoor air quality should not pose environmental or exposure risks at these levels. The total spore count was 280 Count/M^3 and no elevated levels of Carbon monoxide or Carbon dioxide were detected.

Recommendations

- Remove and replace the water damaged ceiling tiles. The contaminated ceiling tiles should be placed in a sealed plastic bag for disposal.

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
Lounge #C110	2377190	N/A	16.1	69.4	541	000	5,940	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	**Windows**
2x4	CMU	0	0	5	2	0	4	4
No	No	N/A	No	No	No	N/A	No	No

Observation Notes

- Accumulations of dust were on the diffusors.
- The indoor air quality should not pose environmental or exposure risks at these levels. The total spore count was 240 Count/M^3 and no elevated levels of Carbon monoxide or Carbon dioxide were detected.

Recommendations

None

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
Room #H116	2377175	N/A	19.2	73.0	783	000	9,505	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	**Windows**
2x4	CMU	2	30	3	3	0	4	4
Yes	No	No	No	No	No	N/A	No	No

Observation Notes

- Three ceiling tiles were water stained and one had suspected microbial growth.
- Accumulations of dust was seen on the diffusors
- The indoor air quality should not pose environmental or exposure risks at these levels. The total spore count was 240 Count/M^3 and no elevated levels of Carbon monoxide or Carbon dioxide were detected.

Recommendations

- Remove and replace the water damaged ceiling tiles. The contaminated ceiling tiles should be placed in a sealed plastic bag for disposal.

Location	IAQ Sample #	Swab	R/H	Temp	CO2	Co	Cubic feet of air.	
Room #E102	2377199	N/A	19.7	73.4	735	000	8,020	
Inspected								
Ceiling Tiles	Walls	Teachers Desk	Children's Desk	Tables	Cabinets Shelving	Convector	HVAC Diffusors	**Windows**
2x4	CMU	1	33	1	4	0	4	4
No	No	No	No	No	No	N/A	No	No

Observation Notes

- Accumulations of dust was seen on the diffusors.
- The indoor air quality should not pose environmental or exposure risks at these levels. The total spore count was 920 Count/M^3 and no elevated levels of Carbon monoxide or Carbon dioxide were detected.

Recommendations

None

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.

Air Sampling Lab Results

SanAir Technologies Laboratory

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

Project Number: 3301 Regency Pkwy
P.O. Number:
Project Name: Samuel Massie Academy
Collected Date: 3/18/2019
Received Date: 3/19/2019 9:40:00 AM

SanAir ID Number
19012416
FINAL REPORT
3/20/2019 10:52:48 AM

Analyst: Shepperson, Josh

Air Cassette Analysis

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

SanAir ID Number	19012416-001			19012416-002			19012416-003			19012416-004		
Analysis Using STL	107C			107C			107C			107C		
Sample Number	2377165			2377200			2377195			2377205		
Sample Identification	Outdoors			Classroom #G100			Classroom #G104			Classroom #G115		
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	2			2			2			2		
Other	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**
Dander	4	160	n/a	16	640	n/a	25	1000	n/a	28	1120	n/a
Fibers				2	80	n/a	2	80	n/a	3	120	n/a
Mycelial Fragments							1	40	n/a			
Pollen				2	80	n/a						
Fungal Identification	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**
Ascospores	1	40	6									
Aspergillus/Penicillium	2	80	12	3	120	60	2	80	9	12	480	46
Basidiospores	12	480	71	1	40	20	3	120	13	5	200	19
Cladosporium species	1	40	6	1	40	20	18	720	78	9	360	35
Epicoccum species												
Ulocladium species	1	40	6									
TOTAL	**17**	**680**		**5**	**200**		**23**	**920**		**26**	**1040**	

Signature: Date: 3/20/2019 Reviewed: Date: 3/20/2019

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SanAir ID Number	19012416-005			19012416-006			19012416-007			19012416-008		
Analysis Using STL	107C			107C			107C			107C		
Sample Number	2377210			2377180			2377194			2377185		
Sample Identification	Classroom #F105			Classroom #F108			Classroom #E105			Science Lab #A120		
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/M^3			40 Count/M^3			40 Count/M^3			40 Count/M^3		
Background Density	2+			2			2			2		
Other	**Raw Count**	**Count/M^3**	**%**	**Raw Count**	**Count/M^3**	**%**	**Raw Count**	**Count/M^3**	**%**	**Raw Count**	**Count/M^3**	**%**
Dander	48	1920	n/a	26	1040	n/a	37	1480	n/a	49	1960	n/a
Fibers	4	160	n/a	5	200	n/a	3	120	n/a	6	240	n/a
Mycelial Fragments												
Pollen												
Fungal Identification	**Raw Count**	**Count/M^3**	**%**	**Raw Count**	**Count/M^3**	**%**	**Raw Count**	**Count/M^3**	**%**	**Raw Count**	**Count/M^3**	**%**
Ascospores	1	40	6									
Aspergillus/Penicillium	11	440	61	9	360	82	2	80	18	3	120	43
Basidiospores	4	160	22				4	160	36	2	80	29
Cladosporium species	2	80	11	2	80	18	5	200	45	2	80	29
Epicoccum species												
Ulocladium species												
TOTAL	**18**	**720**		**11**	**440**		**11**	**440**		**7**	**280**	

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Air Cassette Analysis

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

SanAir ID Number	19012416-009			19012416-010			19012416-011			
Analysis Using STL	107C			107C			107C			
Sample Number	2377190			2377175			2377199			
Sample Identification	Lounge / Kitchen #C110			Classroom #H116			Classroom #E102			
Sample Type	Air Cassette - Micro-5			Air Cassette - Micro-5			Air Cassette - Micro-5			
Volume	25 Liters			25 Liters			25 Liters			
Analytical Sensitivity	40 Count/M³			40 Count/M³			40 Count/M³			
Background Density	2			2			2			
Other	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	
Dander	22	880	n/a	47	1880	n/a	74	2960	n/a	
Fibers	1	40	n/a	4	160	n/a	9	360	n/a	
Mycelial Fragments							1	40	n/a	
Pollen										
Fungal Identification	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	**Raw Count**	**Count/M³**	**%**	
Ascospores										
Aspergillus/Penicillium	3	120	50	5	200	83	9	360	39	
Basidiospores	2	80	33				1	40	4	
Cladosporium species	1	40	17	1	40	17	12	480	52	
Epicoccum species							1	40	4	
Ulocladium species										
TOTAL	**6**	**240**		**6**	**240**		**23**	**920**		

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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. [This information was referenced from the mycology text "The Fifth Kingdom"]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.

Pollen - Produced by trees, flowers, weeds and grasses. The level of pollen production can depend on water availability, precipitation, temperature, and light. Pollen is usually dispersed by either insects or the wind.
Health Effects: Mostly effects the respiratory tract with hay fever symptoms but has also been shown to trigger asthma in some people.

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.

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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.

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.

Ulocladium species - Isolated from soil, dead plants and cellulose materials. Found on textiles. It can be found on many types of materials, but mostly found on decaying materials. Has a greater water activity need for growth and is therefore considered a water indicator organism.
Health Effects: Reported to be a major allergen. Rarely causes subcutaneous infections in humans. It has a high water requirement.
References: De Hoog, G.S., J. Guarro, J. Gene, and M.J. Figueras. Atlas of Clinical Fungi, 2nd Edition. The Netherlands: CBS, 2000.

Conclusions/Recommendations

The school was relatively clean during the inspection. However, two rooms, #A120 and #H116, contained water damaged ceiling tiles. Water stained ceiling tiles were also noticed in the cafeteria and in the main hallway of the school. Please see recommendations above for additional information.
In addition, accumulations of dust were seen on the diffusors throughout the school.

The samples for the rooms tested in this report do not indicate the presence of elevated airborne mold spores and should not pose health or environmental risks. Please refer to the attached lab results 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 410-867-6262.

Respectfully,

Vinny Gigliotti (CIE)
Environmental Solutions, Inc.

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)**