Soil and Land Use Technology, Inc.
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June 17, 2019

Prince George's County Public Schools (PGCPS)
Environmental Safety Office
13306 Old Marlboro Pike
Upper Marlboro, MD 20772

Attention: Alex Baylor
alex.baylor@pgcps.org

Subject: Indoor Air Quality Survey
Excel Academy @ Matthew Henson Elementary School
7910 Scott Road, Landover, MD 20785

Mr. Baylor:

On May 22, 2019, a Soil and Land Use Technology, Inc. (SaLUT) Industrial Hygienist conducted an indoor air quality (IAQ) evaluation at Excel Academy @ Matthew Henson Elementary School, a property maintained by Prince George's County Public Schools (PGCPS) located at 7910 Scott Road, Landover, MD 20785. The inspection was performed in accordance with PGCPS contract number IFB 022-19.

Methodology

The IAQ evaluation conducted by SaLUT included a visual assessment, IAQ instrumentation screening, and a collection of interior air samples for mold in representative locations throughout the building. Additionally, one building exterior environmental air sample was taken for comparison.

Air-borne fungal spore samples were collected on *Air-O-Cell* cassettes using a Buck BioAire calibrated pump. The air samples were taken between three and five feet from the ground. In tandem with collecting mold samples, real-time readings for carbon dioxide, carbon monoxide, temperature and relative humidity were collected using a Fluke 975 Air Meter in representative areas within the facility. A MiniRAE 3000-photoionization detector (PID) was used to measure total volatile organic compounds (TVOC).

Respirable particulate in air (size classes PM2.5µ and PM10µ) was measured using the Particles Plus 8306 Handheld Particle Counter which was calibrated prior to sampling. The fungal spore air samples were delivered to EMSL Analytical, Inc. of Beltsville,

Maryland for analysis. Fungal spores and particulates in air samples were analyzed by Optical Microscopy (methods EMSL 05-TP-003 and ASTM D7391). The sample chain-of-custody and laboratory reports are attached.

Observations

The table below summarizes the main observations from the IAQ survey at Excel Academy @ Matthew Henson Elementary School, visited on May 22, 2019.

Table 1-Observations

Location	Summary of Observations 5-22-2019
Classroom 102-103	2'x4' ceiling tiles and 1'x1' tile floor; One stained ceiling tile; No visual signs of microbial growth, and no odor; No visible dust on floor/other furniture surfaces; Unit ventilator.
Classroom 105-108	2'x4' ceiling tiles and 1'x1' tile floor; No visual signs of microbial growth, and no odor; No visible dust on floor/other furniture surfaces; Unit ventilator.
Classroom 110	2'x4' ceiling tiles and 1'x1' tile floor; No visual signs of microbial growth, and no odor; No visible dust on floor/other furniture surfaces; Unit ventilator.
Classroom 112	2'x4' ceiling tiles and 1'x1' tile floor; Two stained ceiling tiles; No visual signs of microbial growth, and no odor; No visible dust on floor/other furniture surfaces; Unit ventilator.
Classroom 113	2'x4' ceiling tiles and 1'x1' tile floor; No visual signs of microbial growth, and no odor; No visible dust on floor/other furniture surfaces; Unit ventilator.
Classroom 118	2'x4' ceiling tiles and 1'x1' tile floor; No visual signs of microbial growth, and no odor; No visible dust on floor/other furniture surfaces; Unit ventilator.
Classroom 124	2'x4' ceiling tiles and 1'x1' tile floor; No visual signs of microbial growth, and no odor; No visible dust on floor/other furniture surfaces; Unit ventilator.
Multipurpose Room	2'x4' ceiling tiles and 1'x1' tile floor; No visual signs of microbial growth, and no odor; No visible dust on floor/other furniture surfaces; Unit ventilator.

Location	Summary of Observations 5-22-2019
Classrooms throughout the Building	No visual signs of microbial growth, and no odor; No visible dust on floor/other furniture surfaces; Unit ventilator.

Measurements of Indoor Environmental Quality Parameters

Table 2 depicts a summary of average measurements of comfort parameters and respirable particulates.

Temperature

The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) have published recommendations for year round acceptable temperatures in Standard 55-2010 *Thermal Environmental Conditions for Human Occupancy*. The winter comfort range is 20 to 24°C (68 to 75°F) and 23 to 26°C (73 to 79°F) is the summer comfort range. The temperature readings were within the ASHRAE recommended ranges in the representative spaces with the exception of the several localized readings which were lower than the ASHRAE comfort level.

Relative Humidity (RH)

RH is a key factor for mold growth. Mold has the potential of growing on suitable surfaces with humidity levels above 60%. ASHRAE Standard 62.1-2010 *Ventilation for Acceptable Indoor Air Quality* recommends a maximum indoor RH of 65% to preclude the likelihood of condensation on cool surfaces encouraging mold growth. The RH readings were within the ASHRAE recommended ranges in the representative areas.

Carbon Dioxide (CO_2)

Under conditions of maximum occupancy, ASHRAE Standard 62.1-2010, Appendix C, infers that the acceptable CO_2 upper limit is the prevailing outdoor CO_2 concentration plus 700 parts per million (ppm). On the day of the space evaluation, the outdoor (building exterior) CO_2 concentration was approximately 530 ppm therefore indoor concentrations should not exceed approximately 1,230 ppm (700 + 530). The maximum average interior CO_2 concentration detected was 652 ppm in Classroom 118, a range within the ASHRAE recommendations, per Table 2 below.

Carbon Monoxide (CO)

CO is a colorless and odorless gas that is produced by the incomplete combustion of carbon containing fuels. Oil, gasoline, diesel fuels, wood, coke, and coal are major sources of CO. All registered CO concentrations were below the EPA National Ambient Air Quality Standard (NAAQS) of 9 ppm, per Table 2 below.

Respirable Particulates

Direct reading particulate monitoring did not identify a condition of concern. Particulate concentrations for two mass ranges with EPA ambient air quality guidelines (PM2.5 and PM10) were below their respective NAAQS levels. On May 22, 2019, the highest average PM2.5 concentration during the monitoring period was 0.002 mg/m^3 (2 µg/m^3) in Classroom 110. This is compared to the NAAQS primary standard for PM2.5 of 12 µg/m^3 annual mean. The highest average PM10 concentration during the same period was 0.032 mg/m^3 (32 µg/m^3) in Classroom 110. This is compared to NAAQS standard for PM10 of 150 µg/m^3 24 hour average.

Total Volatile Organic Chemicals (TVOC)

LEED's standard of 500 µg/m^3 for TVOC (ANSI/ASHRAE Standard 62.1-2010) concentrations per the instrument's level of detection for a healthy commercial building were used as the standard for TVOCs for this survey. Concentrations below this value can be considered as "background levels" and, at such low concentrations, they are extremely unlikely to cause any adverse health conditions to the occupants. Generally, values below 3000 µg/m^3 are unlikely to cause more than mild irritation or headaches, but to date no recognized industry standard has been established for TVOCs. Perfumes, colognes, and air fresheners as well as certain cleaning chemicals can all cause temporary increases in TVOC readings. TVOC readings cannot be used to establish OSHA limits on specific VOCs or be attributed to specific compounds.

Table 2: Excel Academy @ Matthew Henson Elementary School Instrumental Screening Levels

May 22, 2019

Sample Location	Temp °F	RH%	CO ppm	CO_2 ppm	PM 2.5 mg/m^3	PM 10 mg/m^3	TVOC ppm
Standards	**ASHRAE* 73 to 79°F**	**ASHRAE <65%**	**NAAQS 9**	**ASHRAE 1,230**	**NAAQS 0.012**	**NAAQS 0.150**	**1.0**
Classroom 102-103	69.8	47.7	0	585	0.001	0.028	0
Classroom 105-108	70.7	47.2	0	544	0.001	0.021	0
Classroom 110	68.0	51.9	0	610	0.002	0.032	0.1
Classroom 112	70.7	47.1	0	551	0.001	0.031	0.1
Classroom 113	70.7	48.2	0	527	0.001	0.024	0
Classroom 118	71.5	45.8	0	652	0.001	0.031	0
Classroom 124	68.9	55.3	0	579	0.001	0.026	0
Multipurpose Room	72.5	42.9	0	580	0.001	0.021	0
Exterior of the Building -Next to the entrance	62.6	56	0	530	0.004	0.051	0

PM – Particulate Matter size
°F – Degrees Fahrenheit
CO – Carbon Monoxide
ppm – parts per million
µg/m^3 – micrograms per cubic meter
RH% - % Relative Humidity
CO_2 – Carbon Dioxide
*** - Summer Comfort Range**

Mold-in-Air Samples

There are no definitive regulations or standardized guidelines for addressing airborne mold in an indoor setting. If building systems (ventilation, envelope) are functioning properly, the indoor population profile should mimic what is encountered outdoors and the concentrations should be below the outdoor (building exterior) environmental sample levels.

Tables 3 summarizes airborne mold spore sampling results and locations. On May 22, 2019, total mold counts in representative samples (spore count/m^3 of air) in all the areas inspected were lower than the outdoor concentrations. Laboratory analysis follows this report (see attachment).

Table 3: Excel Academy @ Matthew Henson Elementary School - Measurements of Mold-in-Air Samples

May 22, 2019

Spore Types	Outdoor next to the Building Entrance Area	Classroom 102-103	Classroom 105-108	Classroom 110
Alternaria (Ulocladium)	-	-	-	-
Ascospores	870	400	-	40
Aspergillus/Penicillium	1,200	1,200	520	90
Basidiospores	2,900	1,500	790	200
Bipolaris++	-	-	-	-
Chaetomium	-	-	-	-
Cladosporium	90	90	300	40
Curvularia	-	-	-	-
Epicoccum	-	-	-	-
Fusarium	-	-	-	-
Ganoderma	-	-	-	-
Myxomycetes++	40	-	-	-
Pithomyces++	-	-	-	-
Rust	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-
Unidentifiable Spores	-	-	-	-
Zygomycetes	-	-	-	-
Oidium	200	-	-	-
Polythrincium	-	10*	-	-
Hyphal Fragment	-	-	-	-
Insect Fragment	-	-	-	-
Pollen	300	40	-	-
Total Fungi	**5,300**	**3,200**	**1,610**	**370**

***Spore Counts per cubic meter of air (Counts/m^3).**
++Includes other spores with similar morphology.

Table 3: Excel Academy @ Matthew Henson Elementary School - Measurements of Mold-in-Air Samples continued

May 22, 2019

Spore Types	Classroom 112	Classroom 113	Classroom 118	Classroom 121
Alternaria (Ulocladium)	-	-	-	-
Ascospores	200	300	440	200
Aspergillus/Penicillium	520	740	1,400	830
Basidiospores	200	520	960	440
Bipolaris++	-	-	40	-
Chaetomium	-	-	-	-
Cladosporium	-	40	-	-
Curvularia	-	-	-	-
Epicoccum	-	-	-	-
Fusarium	-	-	-	-
Ganoderma	-	-	-	-
Myxomycetes++	40	-	-	-
Pithomyces++	-	-	-	-
Rust	-	-	40	-
Scopulariopsis/Microascus	-	-	-	-
Stachybotrys/Memnoniella	40	-	-	-
Unidentifiable Spores	-	-	-	-
Zygomycetes	-	-	-	-
Oidium	40	-	-	-
Polythrincium	-	-	-	-
Hyphal Fragment	40	-	-	-
Insect Fragment	-	-	-	-
Pollen	-	100	-	-
Total Fungi	**1,040**	**1,600**	**2,880**	**1,470**

***Spore Counts per cubic meter of air (Counts/m^3).**
++Includes other spores with similar morphology.

Table 3: Excel Academy @ Matthew Henson Elementary School - Measurements of Mold-in-Air Samples continued

May 22, 2019

Spore Types	Multipurpose Room	Outdoor next to the Building Entrance Area	Field Blank
Alternaria (Ulocladium)	-	-	-
Ascospores	40	870	-
Aspergillus/Penicillium	200	1200	-
Basidiospores	100	2900	-
Bipolaris++	-	-	-
Chaetomium	-	-	-
Cladosporium	-	90	-
Curvularia	-	-	-
Epicoccum	-	-	-
Fusarium	-	-	-
Ganoderma	-	-	-
Myxomycetes++	-	40	-
Pithomyces++	-	-	-
Rust	-	-	-
Scopulariopsis/Microascus	-	-	-
Stachybotrys/Memnoniella	-	-	-
Unidentifiable Spores	-	-	-
Zygomycetes	-	-	-
Oidium	-	200	-
Polythrincium	-	-	-
Hyphal Fragment	-	-	-
Insect Fragment	-	-	-
Pollen	-	300	-
Total Fungi	**340**	**5300**	**No Trace**

***Spore Counts per cubic meter of air (Counts/m^3).**
++Includes other spores with similar morphology.

Findings and Conclusions

The comfort parameters (i.e., temperature, RH, CO_2, and CO levels) and respirable particulates in the representative areas conform to ASHRAE and/or NAAQS guidelines with the exception of the some temperature readings which were slightly lower than the ASHRAE comfort level. On May 22, 2019, total mold counts in representative area samples (spore count/m^3 of air) in all the areas inspected were lower than the outdoor concentrations, indicating no amplified mold growth.

Recommendations

Based on the observations of the IAQ survey performed at Excel Academy @ Matthew Henson Elementary School, SaLUT recommends the following measures to address the indoor air quality concerns documented:

1. Replace suspect stained ceiling tiles and thoroughly clean vents in Classroom 102-103;
2. Thoroughly clean vents in Classroom 118.

Thank you for the opportunity to provide industrial hygiene services for PGCPS. If you have any questions, please contact me at 301.595.3783.

Sincerely,

Chaminda Jayatilake, PE, CIH, CSP, CHMM
Certified Industrial Hygienist
Soil and Land Use Technology Inc. (SaLUT)

Attachment

Attachment - Mold Spore Sample Analytical Results and Chain-of-Custody Forms

Attachment

Mold Spore Sample Analytical Results and Chain-of-Custody Forms

EMSL Analytical, Inc.

528 Mineola Avenue Carle Place, NY 11514

Tel/Fax: (516) 997-7251 / (516) 997-7528

http://www.EMSL.com / carleplacelab@emsl.com

EMSL Order: 061909872
Customer ID: SALU50
Customer PO:
Project ID:

Attn: Indika Jayatilake
SaLUT
1818 New York Avenue, NE
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Phone: (301) 595-3783
Fax: (301) 595-3787
Collected: 05/22/2019
Received: 05/22/2019
Analyzed: 05/24/2019

Project: PGCPS IAQ/19-035 Excel Academy @Matthew ES, 7910 Scott Road, Landover MD 20785

Test Report: Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	061909872-0001			061909872-0002			061909872-0003		
Client Sample ID:	2839-4307			2839-4309			2839-4326		
Volume (L):	75			75			75		
Sample Location	Room 102-103			Room 105-108			Room 110		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	9	400	12.5	-	-	-	1	40	10.8
Aspergillus/Penicillium	27	1200	37.5	12	520	32.3	2	90	24.3
Basidiospores	34	1500	46.9	18	790	49.1	5	200	54.1
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	2	90	2.8	6	300	18.6	1	40	10.8
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Oidium	-	-	-	-	-	-	-	-	-
Polythrincium	1*	10*	0.3	-	-	-	-	-	-
Total Fungi	**73**	**3200**	**100**	**36**	**1610**	**100**	**9**	**370**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	1	40	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	44	-	-	44	-	-	44	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	2	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	2	-	-	2	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

Jeffrey Lau, Microbiology Laboratory Manager
or other approved signatory

High levels of background particulate can obscure spores and other particulates leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Carle Place, NY AIHA-LAP, LLC--EMLAP Accredited #102344

Initial report from: 05/26/2019 15:33:00

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

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Analyzed: 05/24/2019

Project: PGCPS IAQ/19-035 Excel Academy @Matthew ES, 7910 Scott Road, Landover MD 20785

Test Report: Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	061909872-0004			061909872-0005			061909872-0006		
Client Sample ID:	2839-4324			2839-4322			2839-4352		
Volume (L):	75			75			75		
Sample Location	Room 112			Room 113			Room 118		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	4	200	19.2	7	300	18.8	10	440	15.3
Aspergillus/Penicillium	12	520	50	17	740	46.3	32	1400	48.6
Basidiospores	5	200	19.2	12	520	32.5	22	960	33.3
Bipolaris++	-	-	-	-	-	-	1	40	1.4
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	1	40	2.5	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	1	40	3.8	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	1	40	1.4
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	1	40	3.8	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Oidium	1	40	3.8	-	-	-	-	-	-
Polythrincium	-	-	-	-	-	-	-	-	-
Total Fungi	**24**	**1040**	**100**	**37**	**1600**	**100**	**66**	**2880**	**100**
Hyphal Fragment	1	40	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	3	100	-	-	-	-
Analyt. Sensitivity 600x	-	44	-	-	44	-	-	44	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	2	-	-	2	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	2	-	-	1	-
Background (1-5)	-	2	-	-	2	-	-	2	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

Jeffrey Lau, Microbiology Laboratory Manager
or other approved signatory

High levels of background particulate can obscure spores and other particulates leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

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Initial report from: 05/26/2019 15:33:00

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Lab Sample Number:	061909872-0007			061909872-0008			061909872-0009		
Client Sample ID:	2839-4310			2839-4348			2839-4325		
Volume (L):	75			75			75		
Sample Location	Room 121			Multi Purpose Room			Outside Exterior EV Sample		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	5	200	13.6	1	40	11.8	20	870	16.4
Aspergillus/Penicillium	19	830	56.5	4	200	58.8	27	1200	22.6
Basidiospores	10	440	29.9	3	100	29.4	67	2900	54.7
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	2	90	1.7
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	1	40	0.8
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Oidium	-	-	-	-	-	-	5	200	3.8
Polythrincium	-	-	-	-	-	-	-	-	-
Total Fungi	**34**	**1470**	**100**	**8**	**340**	**100**	**122**	**5300**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	6	300	-
Analyt. Sensitivity 600x	-	44	-	-	44	-	-	44	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	2	-	-	2	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	2	-	-	2	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

Jeffrey Lau, Microbiology Laboratory Manager
or other approved signatory

High levels of background particulate can obscure spores and other particulates leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Carle Place, NY AIHA-LAP, LLC--EMLAP Accredited #102344

Initial report from: 05/26/2019 15:33:00

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

EMSL Analytical, Inc.

528 Mineola Avenue Carle Place, NY 11514

Tel/Fax: (516) 997-7251 / (516) 997-7528

http://www.EMSL.com / carleplacelab@emsl.com

EMSL Order: 061909872
Customer ID: SALU50
Customer PO:
Project ID:

Attn: Indika Jayatilake
SaLUT
1818 New York Avenue, NE
Suite 218A
Washington, DC 20002

Phone: (301) 595-3783
Fax: (301) 595-3787
Collected: 05/22/2019
Received: 05/22/2019
Analyzed: 05/24/2019

Project: PGCPS IAQ/19-035 Excel Academy @Matthew ES, 7910 Scott Road, Landover MD 20785

Test Report: Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	061909872-0010		
Client Sample ID:	2839-4331		
Volume (L):			
Sample Location	Field Blank		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-
Ascospores	-	-	-
Aspergillus/Penicillium	-	-	-
Basidiospores	-	-	-
Bipolaris++	-	-	-
Chaetomium	-	-	-
Cladosporium	-	-	-
Curvularia	-	-	-
Epicoccum	-	-	-
Fusarium	-	-	-
Ganoderma	-	-	-
Myxomycetes++	-	-	-
Pithomyces++	-	-	-
Rust	-	-	-
Scopulariopsis/Microascus	-	-	-
Stachybotrys/Memnoniella	-	-	-
Unidentifiable Spores	-	-	-
Zygomycetes	-	-	-
Oidium	-	-	-
Polythrincium	-	-	-
Total Fungi	**-**	**No Trace**	**-**
Hyphal Fragment	-	-	-
Insect Fragment	-	-	-
Pollen	-	-	-
Analyt. Sensitivity 600x	-	0	-
Analyt. Sensitivity 300x	-	0*	-
Skin Fragments (1-4)	-	-	-
Fibrous Particulate (1-4)	-	-	-
Background (1-5)	-	-	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

Jeffrey Lau, Microbiology Laboratory Manager
or other approved signatory

High levels of background particulate can obscure spores and other particulates leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Carle Place, NY AIHA-LAP, LLC--EMLAP Accredited #102344

Initial report from: 05/26/2019 15:33:00

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

OrderID: 061909872

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Microbiology Chain of Custody

EMSL Order Number (Lab Use Only): 061909872

PHONE:
FAX:

Company Name: SaLUT Inc.	**EMSL-Bill to:** ☒ Same ☐ Different If Bill to is Different note instructions in Comments**
Street: 1818 New York Ave NE Suite 231	*Third Party Billing requires written authorization from third party*
City: Washington **State/Province:** DC	**Zip/Postal Code:** 20002 **Country:** USA
Report To (Name): Indika Jayatillake	**Telephone #:** 301-595-3783
Email Address: ijayatillake@salutinc.com	**Fax #:** **Purchase Order:**
Project Number/Location: PGCPS IAQ/19-035 Excel Academy @Mathew Henson ES	**Please Provide Results:** ☐ Fax ☒ Email
Location Address: 7910 Scott Road, Landover MD 20785	**Connecticut Samples:** ☐ Commercial ☐ Residential

**Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide. TATs are subject to methodology requirements*

Sterile, Sodium Thiosulfate Preserved Bottle Used: ☐ **Biocide Used in Source (specify):** _____ ☐

Public Water Supply Samples: ☐ **Note: All results may automatically be reported to DOH if required by state.**

Turnaround Time (TAT) Options * - Please Check

☐ 3 Hour	☐ 6 Hour	☐ 24 Hour	☐ 48 Hour	☐ 72 Hour	☐ 96 Hour	☒ 1 Week	☐ 2 Week

Microbiology Test Codes

M001 Air-O-Cell
M174 MoldSnap
M030 Micro 5
M032 Allergenco-D
M041 Fungal Direct Examination
M169 Pollen ID & Enumeration
M280 Dust Characterization Level-1
M281 Dust Characterization Level-2
M005 Viable Fungi- Air Samples (Genus ID & Count)
M006 Viable Fungi- Air Samples (Includes *Penicillium, Aspergillus, Cladosporium, Stachybotrys* Species ID & Count)
M007 Culturable fungi - Surface Samples (Genus ID & Count)
M008 Culturable fungi - Surface Samples (Includes *Penicillium, Aspergillus, Cladosporium, Stachybotrys* Species ID & Count)
M009 Bacteria Culture Gram Stain & Count
M010 Bacteria Count & ID - 3 Most Prominent
M011 Bacteria Count & ID - 5 Most Prominent
M012 Pseudomonas aeruginosa (P/A***)

M024 Pseudomonas aeruginosa (MFT*)
M015 Heterotrophic Plate Count
M017 Total Coliform & E. coli (Colilert P/A***)
M018 Total Coliform & E. coli (MFT*)
M114 Total Coliform & E. coli Enumeration (Colilert MPN**)
M019 Fecal Coliform (MFT*)
M020 Fecal Streptococcus (MFT*)
M029 Enterococci (MFT*)
M129 Enterococci (Enterolert P/A***)
M180 Real Time qPCR-ERMI 36 Panel
M025 Sewage Screen –Water (MFT*)

M115 Sewage Screen - Water (P/A***)
M116 Sewage Screen - Water (MPN**)
M117 Sewage Screen - Swab (P/A***)
M013 Sewage Screen - Swab (MFT*)
M133 Methicillin-resistant Staph. aureus (MRSA)
M031 Rapid-growing non-TB Mycobacteria Detection & Enumeration
M014 Endotoxin Analysis
M044 Group Allergen (Cat, Dog, Cockroach, Dust Mite)
Other See Analytical Price Guide
Legionella Analysis Please use EMSL Legionella COC

*MFT= Membrane Filtration Technique
**MPN= Most Probable Number
***P/A= Presence/Absence

Name of Sampler: **Signature of Sampler:**

Sample #	Sample Location/Description	Sample Type	Potable/ NonPotable (only for waters)	Test Code	Volume/ Area	Date/Time Collected	Temperature (°C) (Lab Use Only)
2839 - 4307	Room 102-103	Air	☐P ☐NP	M001 (M)	75L	5/22/2019	
2839 - 4309	Room 105 - 108	Air	☐P ☐NP	M001 (M)	75L	5/22/2019	
2839 - 4326	Room 110	Air	☐P ☐NP	M001	75L	5/22/2019	
2839 - 4324	Room 112	Air	☐P ☐NP	M001	75L	5/22/2019	
2839 - 4322	Room 113	Air	☐P ☐NP	M001	75L	5/22/2019	
2839 - 4352	Room 118	Air	☐P ☐NP	M001	75L	5/22/2019	

Client Sample # (s): **Total # of Samples:** 10 **Samples Received Chilled?** Yes / No

Relinquished (Client): Thomas Dalkin **Date:** 5/22/19 **Time:** 4:40 pm

Received (Lab): **Date:** 5/22/19 **Time:** 4:40 pm

Comments/Special Instructions:

5/24/19

RCVD 5/24/19 @ 9:38AM

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

Microbiology Chain of Custody

EMSL Order Number *(Lab Use Only)*: 061909872

[illegible]

PHONE:
FAX:

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	Sample Location/Description	Sample Type	Potable/ NonPotable	Test Code	Volume/ Area	Date/Time Collected	Temperature (°C) (Lab Use Only)
2839 - 4310	Room 121	Air	☐ P ☐ NP	M001	75L	5/22/2019	
2839 - 4348	Multi Purpose Room	Air	☐ P ☐ NP	M001	75L	5/22/2019	
2839 -4325	Outside Exterior EV Sample	Air	☐ P ☐ NP	M001	75L	5/22/2019	
2839 - 4331	Field Blank	Air	☐ P ☐ NP	N/A	N/A	5/22/2019	
			☐ P ☐ NP				
			☐ P ☐ NP				
			☐ P ☐ NP				
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Comments/Special Instructions: