April 4, 2021

Mr. Alex Baylor via email: alex.baylor@pgcps.org
Environmental Specialist
Environmental Safety Office
Prince George's County Public Schools
Division of Supporting Services / Building Services
13306 Old Marlboro Pike
Upper Marlboro, MD 20772

RE: Indoor Air Quality (IAQ) and Mold Assessment Services
Prince George's County Public Schools - Samuel Chase Elementary School
5700 Fisher Road, Temple Hills, Maryland 20748
Contract #: IFB 022-19: Indoor Air Quality Services at Various Locations
Tidewater Project No.: 5419-028

Dear Mr. Baylor:

Tidewater, Inc. (Tidewater) is pleased to present this final report regarding the results of the Indoor Air Quality (IAQ) and Mold Assessment Services conducted by Tidewater at Samuel Chase Elementary School located at 5700 Fischer Road in Temple Hills, Maryland. The IAQ and Mold survey was conducted on November 18, 2020, by Tidewater's Project Manager and Certified Industrial Hygienist, Mr. Skanda Abeyesekere MS, CIH, CSP, CHMM. Re-sampling of areas with elevated mold concentrations were conducted on February 27, 2021 and April 1, 2021.

The scope of work for the IAQ assessment and mold survey included:

- Visual inspections of the following representative areas of the school: Media Center, Multipurpose Room, Main Office, Classroom 103, Classroom 106, Classroom 110, Classroom 24 and Classroom 21 located on the 1st Floor; and Classroom 11 and Classroom 14 located on the Lower Level for evidence of potential indoor air quality problems (including suspect microbial growth, water damage, chemical use/ storage, drain traps, sources of allergens/ contaminants, etc.) that may contribute to indoor air quality problems;
- Direct read measurements for temperature (T), relative humidity (RH), carbon dioxide (CO_2), and carbon monoxide (CO) in the above locations for comparison with standards established by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 62.1–2019, Ventilation for Acceptable Indoor Air Quality, and The United States Environmental Protection Agency (US EPA) National Ambient Air Quality Standards (NAAQS);
- Direct read measurements for Particulate Matter less than 10 microns (PM10) in the above locations for comparison with standards established by the United States Environmental Protection Agency (US EPA); and
- Air sampling for non-viable microbial spores in the above locations for total airborne fungal spore analysis.

Visual Observation

Due to the on-going COVID-19 pandemic, the school building was occupied by limited number of staff and no students were present at the time of the survey. As a result, the majority of the classrooms and other common areas inspected were vacant at the time of the inspection. Tidewater's assessment included a visual inspection of the following representative areas of Samuel Chase Elementary School. The results of Tidewater's visual inspection are as follows:

Media Center

The Media Center was vacant at the time of the inspection. A significant portion of ceiling tiles located in the rear end of the media center have been abated, most likely due to water intrusion/ mold impact, exposing the ceiling grids and suspended ceiling. The return air grills located on the ceiling appeared to be clean and free of dust. Two (2) window-mounted air conditioning units and one (1) floor mounted fan coil unit were located in the Media Center. These units were not in operation at the time of the inspection. A water-stained ceiling tile was observed in the work room. No signs of mold growth were observed in the Media Center. Furthermore, no odors were detected in the Media Center.

Multi-Purpose Room

A strong food odor was detected upon entry into the Multi-Purpose Room. The return air grill located in the rear of the multi-purpose room appeared to be dusty. Several ceiling-mounted exhaust fans were in operation at the time of the inspection. The multi-media room was equipped with five (5) window-mounted air conditioning units, which were not in operation at the time of the inspection.

Main Office

One (1) occupant was in the Main Office at the time of the inspection. The return air grill located on the office wall appeared to be dusty. The Main Office was relatively clean. No signs of mold growth or past or ongoing water-intrusion problems were observed in the Main Office. No odors were detected in the Main Office.

Classroom 103

Classroom 103 was vacant at the time of the inspection. The wall-mounted fan coil unit and the floor-mounted air conditioning unit were not in operation at the time of the inspection. The classroom appeared to be clean. No signs of mold growth or past or ongoing water-intrusion problems were observed. Furthermore, no odors were detected from the classroom.

Classroom 106

Classroom 106 was vacant at the time of the inspection. One (1) window-mounted air conditioning unit and one (1) wall-mounted fan coil unit were observed in the classroom. Both units were not in operation at the time of the inspection. The supply grills of the window-mounted air conditioning unit had visible suspect surface mold. No signs of ongoing water-intrusion problems were observed in the classroom and no odors were detected. The classroom appeared to be clean. Housekeeping appeared to be satisfactory.

Classroom 110

The classroom was vacant at the time of the inspection. The wall-mounted fan coil unit was in operation at the time of the inspection and was emitting warm air. The window-mounted air conditioning unit was not in operation at the time of the inspection. The classroom appeared to be clean. No signs of mold growth or past or ongoing water-intrusion problems were noted. Furthermore, no odors were detected from the classroom.

Classroom 21

Classroom 21 was vacant at the time of the inspection. The window-mounted air conditioning unit and wall-mounted fan coil unit were not in operation at the time of the inspection. A widow-mounted air-conditioning unit was also observed in the adjacent room which appeared to be dismantled. No signs of mold growth or past or ongoing water-intrusion problems were observed in the classroom. The ceiling-mounted air supply grills appeared to be clean. General housekeeping within the classroom appeared to be satisfactory.

Classroom 24

Classroom 24 was vacant at the time of the inspection. The window-mounted air conditioning unit and the wall-mounted fan coil unit in the classroom were not in operation at the time of the inspection. No signs of mold growth or past or ongoing water intrusion problems were observed in the classroom. The ceiling-mounted air supply grills appeared to be clean. General housekeeping within the classroom appeared to be satisfactory.

Classroom 14

Classroom 14 was vacant at the time of the inspection. A window-mounted air conditioning unit was not in operation at the time of the inspection. A wall-mounted fan coil unit was also observed in the classroom. This fan coil unit was in operation at the time of the inspection. General housekeeping within the classroom appeared to be satisfactory. No signs of mold growth or past or ongoing water intrusion problems were noted within the classroom. No odors were detected within the classroom.

Classroom 11

Classroom 11 was vacant at the time of the inspection. A window-mounted air conditioning unit was in the classroom. This unit was not in operation at the time of the inspection. The supply grills of the window-mounted air conditioning unit had visible suspect surface mold. No signs of ongoing water-intrusion problems were observed in the classroom and no odors were detected. The classroom appeared to be clean. Housekeeping appeared to be satisfactory. A wall-mounted fan coil unit was also observed in the classroom. The fan coil unit was not in operation at the time of the inspection. The unit contained storage items placed on top of the air supply grills hindering air flow when the unit is in operation. General housekeeping within the classroom appeared to be satisfactory. No signs of mold growth or past or ongoing water-intrusion problems were observed within the classroom. No odors were detected within the classroom.

Comfort Parameter Air Testing

During the assessment, Tidewater obtained temperature (T), relative humidity (RH), carbon dioxide (CO_2), and carbon monoxide (CO) measurements within select locations of the school using a TSI VelociCalc Indoor Air Quality instrument (Model Number 9565-X, Serial Number

9565X 1945 002, Calibration Date: November 8, 2019.) Measurements were taken after allowing the instrument to become acclimated to the ambient temperature and relative humidity for approximately five (5) minutes. Measurements were taken over a 5-minute time period at each designated location and the average concentration was recorded. Samples were obtained for comparison with standards established by the American Society for Heating Refrigeration and Air Conditioning (ASHRAE) Standard 62.1 – 2019, Ventilation for Acceptable Indoor Air Quality. Tidewater also obtained a background sample from outside the main entrance of the school building for comparison to the interior readings.

The results of the IAQ comfort parameter monitoring are provided in Table 1, in **Attachment A**

According to the American Society for Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) Standard 62.1 – 2019, the temperature range in summer months should be maintained between 73.0°F and 79.0°F for maximum occupant comfort. The ASHRAE standard for temperature for winter months is between 68.0°F and 74.5°F. The indoor temperature levels within the assessed areas on November 18, 2020 ranged between 63.5°F and 69.5°F, and the background temperature outside the building was 45.7°F. The temperature levels recorded within the majority of the classrooms were below the temperature levels typically observed during the fall-winter transitional period. All classrooms were vacant at the time of the inspection. Indoor temperature levels tend to fluctuate throughout the work day based on the number of occupants present within the classrooms. The temperature levels in the vacant classrooms are likely to be within ASHRAE standards when the classrooms are re-occupied.

Per the same ASHRAE standard, a maximum recommended relative humidity level of 65.0% or below is recommended to reduce the likelihood of condensation on cold surfaces. Relative humidity levels within the assessed areas on November 18, 2020 ranged between 21.0% and 43.8%. The background relative humidity level outside the building was 30.7%. The relative humidity levels in all areas assessed were below the ASHRAE recommended maximum relative humidity standard of 65.0%.

ASHRAE Standard 62.1 – 2019 recommends that indoor CO_2 levels not exceed 700 ppm above the outdoor background CO_2 level. The CO_2 levels in the assessed areas on November 18, 2020 ranged between 420 ppm to 523 ppm. The background CO_2 level outside the building was 400 ppm. The CO_2 levels within all interior locations assessed did not exceed 700 ppm above the outdoor background CO_2 level of 400 ppm.

The CO levels in all areas assessed on November 18, 2020 were below the maximum standard of 9.0 ppm recommended by the Indoor Air Quality Association (IAQA) for CO in occupied indoor environments.

Particulate Matter Less Than 10 microns (PM10)

During the assessment, Tidewater obtained particulate matter less than 10 microns (PM10) dust particulate measurements within select locations of the school using a TSI® DUST TRAK II™ Aerosol Monitor (Model 8534, Serial Number 8534170101.) Measurements were taken after allowing the device to become acclimated to the ambient temperature and relative humidity for five (5) minutes. Measurements were taken over a 5-minute time period at each sampling location and the average concentration was recorded for comparison with guidelines established by the United States Environmental Protection Agency (US EPA, December 2012.)

Tidewater also obtained a background sample from outside the main entrance of the school building for comparison to the interior readings.

The results of the particulate matter sampling are provided in Table 2, in **Attachment A**.

Based on the EPA National Ambient Air Quality Standard (NAAQS) for Particulate Matter, Final Rule (January 15, 2013), the 24-hour primary and secondary exposure standard for particulate matter less than 10 microns (PM10) is 150.0 micrograms per cubic meter of air (µg/m^3) or 0.150 milligrams per cubic meter of air (mg/m^3.) The results of the PM10 analysis indicate that the average PM10 dust concentrations in all assessed areas ranged between 0.038 mg/m^3 and 0.075 mg/m^3. The average PM10 dust concentration in the background sample obtained in front of the main entrance was 0.070 mg/m^3. The PM10 concentrations all areas assessed were below the EPA 24-hour primary and secondary NAAQS of 0.150 mg/m^3.

Spore Trap Bioaerosol Sampling

Tidewater collected spore trap air samples from selected locations within the school to characterize air quality for total airborne total fungal spores. The samples were collected from the same locations where the comfort parameters were recorded. Tidewater obtained the spore trap samples using Allergenco-D cassettes affixed to a Buck BioAire™ Bioaerosol Sampling Pump (Pump Model Number B520 and Serial Number B153043) calibrated to a flow rate of 15.0 Liters per minute. Each sample was run for a period of five (5) minutes at each sample location to collect a total sample volume of 75.0 liters of air. Tidewater also obtained a background sample from outside the main entrance of the school building for comparison to the interior readings.

Once collected, the samples were transported to EMSL Analytical Laboratory (EMSL) located in Beltsville, Maryland for analysis via a standard turn-around time. The samples were transported following rigorous chain-of-custody guidelines to ensure proper handling and delivery of the samples. EMSL is accredited in the American Industrial Hygiene Association (AIHA) Environmental Microbiology Laboratory Accreditation Program (EMLAP) and is a successful participant in AIHA's Environmental Microbiology Proficiency Analytical Testing (EMPAT) program (Laboratory Number 102891.) The samples were analyzed via light microscopy at the standardized magnification of 600X. This technique does not allow for the differentiation between *Aspergillus* and *Penicillium* spores because they are morphologically identical. Additionally, the technique does not allow for cultivation, or the identification of spores to the species level, except in a few cases.

There are no universally accepted federal or State of Maryland standards for acceptable airborne concentrations of bioaerosols in an indoor occupational environment. In general, indoor airborne concentrations should be less than that found in the outdoor air, with similar species composition. Indoor spore counts significantly greater than those outdoors, or the presence of large numbers of different types of spores indoors that are not found outdoors, may indicate contamination and potential indoor air quality problems.

The total mold spore counts in all assessed areas of the school ranged between 420 spores/m^3 and 10,970 spores/m^3. The mold spore concentrations in the background sample obtained outdoors was 980 spores/m^3. The total mold spore concentrations in the majority of the indoor samples exceeded the background sample concentration. The total mold spore concentration in in samples # SCES-7 (Room 24), SCES-3 (Room 103), and SCES-8 (Room 21) were significantly higher than the background sample concentration of 980 spores/m^3.

Furthermore, the concentration of species of the genus *Aspergillus/ Penicillium* in samples # SCES-7 (6,880 counts/m^3), SCES-3 (7,850 counts/m^3), and SCES-8 (2,400 counts/m^3) were 60 - 200 times higher than the concentration of *Aspergillus/* Penicillium species detected in the background sample (SCES-BG) of 40 counts/m^3 indicating the presence of potential indoor sources of mold in these areas.

A*spergillus/ Penicillium* are the most common mold species that are detected in indoor air samples. Most of the hundreds of sub-species are allergenic with only a few that are toxic. This group of species will grow with only the humidity in the air as its water source.

All samples were dominated by species of the genus *Basidiospores*. *Basidiospores* are often found growing indoors on water damaged building materials as well as on food items. Although it can act as an allergen which can cause hay fever, asthma, hypersensitivity pneumonitis in sensitized individuals, it is rarely that this mold acts as a pathogen that causes risks to humans.

Although, visible suspect surface mold formations were not observed in Rooms 21, 103 and 24 during the visual inspection, it is possible that surface mold could be present above the drop ceiling or in the duct system of Rooms 21, 103 and 24.

The above areas were re-sampled on February 27, 2021 and on April 1, 2021 following cleanup activities. The results indicated that the total mold spore concentrations and the concentration of *Aspergillus/ Penicillium* spores in all areas were below the background concentration.

The summary of the results for the spore trap sampling are provided in Table 3 in **Attachment A**. The laboratory analytical results, including speciation and chain of custody forms for the spore trap samples are included in **Attachment B**.

CONCLUSIONS

- During the visual inspections conducted within representative areas of the school, the follow issues were identified:
  - Media Center: A significant portion of ceiling tiles located in the rear end have been abated exposing the ceiling grids and drop ceiling. A water-stained ceiling tile was observed in the work room.
  - Multi-purpose Room: A strong food odor was detected. The return air grills located in the rear of the multi-purpose room appeared to be dusty.
  - Main Office: The return air grill located on the office wall appeared to be dusty.
  - Classroom 106: The supply grills of the window-mounted air conditioning unit had visible surface mold.
  - Classroom 21: A widow-mounted air-conditioning unit in the adjacent room was dismantled and non-functional.
  - Classroom 11: The supply grills of the window-mounted air conditioning unit had visible surface mold. The wall-mounted fan coil unit contained storage items placed on top of the air supply grills hindering air flow when in operation.
- Temperature levels recorded within the majority of the classrooms were below the temperature levels typically observed during the fall-winter transitional period.

- The Relative humidity, CO2, CO readings and particulate matter less than 10 microns (PM10) recorded within the assessed areas were within industry standards and guidelines;
- The total mold spore concentrations in all interior locations assessed were below the background sample concentration and were also consistent with those observed in the background sample. The results do not indicate elevated levels of airborne total fungal spores in the interior locations sampled.

RECOMMENDATIONS

Based on the results of our visual inspection, Tidewater proposes the following:

- Replace all missing ceiling tiles in the Media Center once repair / maintenance activities above the ceiling are complete. Investigate above the water-stained ceiling tiles in the work room for any ongoing water leaks and suspect surface mold formations. If any leaks are detected, repair them immediately. If suspect surface mold contamination is observed, appropriate steps should be taken to remediate and sanitize the affected area. Remove the water-stained ceiling tile in the work room. Ensure that the perimeter of the ceiling grids are cleaned with a commercially available (EPA approved) disinfectant to mitigate existing fungal spores prior to installing a new ceiling tile;
- Clean all air supply and return air grills located in the multi-purpose room and the main office on a regular basis to eliminate dust and grime buildup;
- Clean the air supply grills of the window-mounted air conditioning units in Classroom 106 and Classroom 11 with a commercially available (EPA approved) disinfectant to eliminate surface mold;
- The dismantled widow-mounted air-conditioning unit in the adjacent room in Classroom 21 should be removed or replaced;
- Ensure that supply grills of the fan coil unit in Classroom 11 is left unobstructed to ensure adequate air supply into the classroom;
- Maintain good housekeeping practices in all common areas and classrooms. All common area and classrooms floors should be broom cleaned at the end of each day once the school re-opens for students. Furthermore, all horizontal surfaces including desk tops, furniture, window sills and suspended light fixtures should be cleaned on a routine basis to prevent the accumulation of dust;
- Ensure the Heating Ventilation and Air Conditioning (HVAC) System supplying air to all common areas and classrooms is properly balanced per design requirements and are turned on and are operating at all times to ensure adequate ventilation throughout the classrooms before the school re-opens.

Qualifications

Tidewater has endeavored to investigate existing conditions in representative areas of Samuel Chase Elementary School located at 5700 Fisher Road, Temple Hills, Maryland as they pertain to indoor air quality and mold contamination.

Our conclusions and recommendations are based on the observations made on the day of our assessment, laboratory data from the time of the assessment, and information provided by both our Client and the area occupants. Actual conditions vary from day to day throughout the year.

Tidewater appreciates the opportunity to provide Industrial Hygiene consulting services for Prince Georges County Public Schools. Please contact us should any questions arise concerning this report or if we may be of further assistance.

Sincerely,

Tidewater, Inc.

Skanda Abeyesekere, MS, CIH, CSP, CHMM
Project Manager

Jonathan N. Schatz, MS, CES, CEI
Manager, IH Services

SA/JNS

Attachments: **Attachment A – Summary of Comfort Parameters, PM10 Particulate Dust, and Microbial Results**
Attachment B – Laboratory Reports and Chain of Custody Forms
Attachment C – Instrument Calibration Certificates
Attachment D – Relevant Certifications
Attachment E – Floor Plan with Sampling Locations

APPENDIX A

COMFORT PARAMETERS, PM10 PARTICULATE DUST, AND MICROBIAL RESULTS

Table 1: Indoor Air Quality Comfort Parameters Samuel Chase Elementary School				
Location	**Temperature (°F)**	**Carbon Dioxide (ppm)**	**Relative Humidity (%)**	**Carbon Monoxide (ppm)**
November 18, 2020				
Media Center	63.5	43.8	523	0.0
Multipurpose Room	64.0	37.5	490	0.0
Classroom 103	64.5	35.8	484	0.0
Classroom 106	65.9	22.6	438	0.0
Classroom 110	66.3	22.9	420	0.0
Main Office	68.1	26.7	438	0.0
Classroom 24	67.7	21.3	450	0.0
Classroom 21	68.1	21.0	444	0.0
Lower Level - Classroom 14	67.8	29.9	464	0.0
Lower Level - Classroom 11	69.5	25.5	452	0.0
Background (Outdoors)	45.7	30.7	400	0.0

*Highlighted Areas indicate locations in which temperature levels were below the American Society for Heating Refrigeration and Air Conditioning (ASHRAE) Standard 62.1 – 2019 recommended standards for winter months.

Table 2: Particulate Matter Less than 10 Microns (PM10) Samuel Chase Elementary School	
Location	**Particulate Matter (PM10)** **Concentration (mg/m^3)**
November 18, 2020	
Media Center	0.067
Multipurpose Room	0.069
Classroom 103	0.075
Classroom 106	0.038
Classroom 110	0.069
Main Office	0.070
Classroom 24	0.072
Classroom 21	0.071
Lower Level - Classroom 14	0.070
Lower Level - Classroom 11	0.072
Background (Outdoors)	0.070

Table 3: Spore Trap Sampling Results Samuel Chase Elementary School			
November 18, 2020			
Sample Number	**Sample Location**	**Sample Volume (L)**	**Total Fungi Concentration (Counts/m^3)**
SCES-1	Media Center	75.0	**1,750**
SCES -2	Multipurpose Room	75.0	750
SCES-3	Classroom 103	75.0	**8,290**
SCES-4	Classroom 106	75.0	**1,380**
SCES-5	Classroom 110	75.0	630
SCES-6	Main Office	75.0	**1,760**
SCES-7	Classroom 24	75.0	**10,970**
SCES-8	Classroom 21	75.0	**4,240**
SCES-9	Lower Level - Classroom 14	75.0	420
SCES-10	Lower Level - Classroom 11	75.0	**2,980**
SCES -BG	Background (Outdoors)	75.0	980

*Highlighted Area indicate location where the concentrations of the indoor sample exceeded the level detected in the background sample.

Table 3: Spore Trap Sampling Results Samuel Chase Elementary School			
February 27, 2021			
Sample Number	**Sample Location**	**Sample Volume (L)**	**Total Fungi Concentration (Counts/m³)**
SCES-6	Main Office	75.0	260
SCES-4	Classroom 106	75.0	80
SCES-7	Classroom 24	75.0	300
SCES-8	**Classroom 21**	**75.0**	**1,310**
SCES-10	Lower Level - Classroom 11	75.0	300
SCES-3	Classroom 103	75.0	300
SCES -BG	Background (Outdoors)	75.0	106

*Highlighted Area indicate location where the concentrations of the indoor sample exceeded the level detected in the background sample.

Table 3: Spore Trap Sampling Results Samuel Chase Elementary School			
April 1, 2021			
Sample Number	**Sample Location**	**Sample Volume (L)**	**Total Fungi Concentration (Counts/m^3)**
SCES-1	Classroom 21	75.0	1,310
SCES -BG	Background (Outdoors)	75.0	13,590

APPENDIX B

LABORATORY REPORTS AND CHAIN OF CUSTODY FORMS

EMSL Analytical, Inc.

10768 Baltimore Avenue Beltsville, MD 20705
Tel/Fax: (301) 937-5700 / (301) 937-5701
http://www.EMSL.com / beltsvillelab@emsl.com

EMSL Order: 192011796
Customer ID: TIDE50
Customer PO:
Project ID:

Attention: Skanda Abeyeskere
Tidewater, Inc.
6625 Selnick Drive
Suite A
Elkridge, MD 21075
Project: SAMUEL CHASE ELEMENTARY

Phone: (410) 540-8700
Fax: (410) 997-8713
Collected Date: 11/18/2020
Received Date: 11/30/2020
Analyzed Date: 12/07/2020

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

Lab Sample Number:	192011796-0001			192011796-0002			192011796-0003		
Client Sample ID:	SCES-1			SCES-2			SCES-3		
Volume (L):	75			75			75		
Sample Location:	MULTIPURPOSE RMS			CAFETERIA			RM 103		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	2	80	4.6	-	-	-	2	80	1
Aspergillus/Penicillium	-	-	-	-	-	-	186	7850	94.7
Basidiospores	39	1600	91.4	17	720	96	3	100	1.2
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	1	40	2.3	-	-	-	3	100	1.2
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	2*	30*	1.7	2*	30*	4	-	-	-
Pithomyces++	-	-	-	-	-	-	1	40	0.5
Rust	-	-	-	-	-	-	2	80	1
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Torula-like	-	-	-	-	-	-	1	40	0.5
Total Fungi	**44**	**1750**	**100**	**19**	**750**	**100**	**198**	**8290**	**100**
Hyphal Fragment	-	-	-	1*	10*	-	1	40	-
Insect Fragment	2*	30*	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	42	-	-	42	-	-	42	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

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

No discernable field blank was submitted with this group of samples.

Abubakar Barry, Microbiology Lab 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.

Samples analyzed by EMSL Analytical, Inc. Beltsville, MD AIHA-LAP, LLC-EMLAP Accredited #102891

Initial report from: 12/14/2020 09:33 AM

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

EMSL Analytical, Inc.

10768 Baltimore Avenue Beltsville, MD 20705
Tel/Fax: (301) 937-5700 / (301) 937-5701
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EMSL Order: 192011796
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Attention: Skanda Abeyeskere
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6625 Selnick Drive
Suite A
Elkridge, MD 21075
Project: SAMUEL CHASE ELEMENTARY

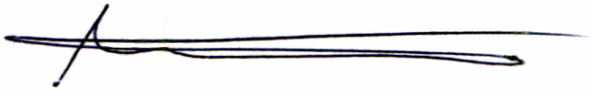
Phone: (410) 540-8700
Fax: (410) 997-8713
Collected Date: 11/18/2020
Received Date: 11/30/2020
Analyzed Date: 12/07/2020

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

Lab Sample Number:	192011796-0004			192011796-0005			192011796-0006		
Client Sample ID:	SCES-4			SCES-5			SCES-6		
Volume (L):	75			75			75		
Sample Location:	RM 106			RM 110			MAIN OFFICE		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	1	40	2.9	-	-	-	-	-	-
Aspergillus/Penicillium	13	550	39.9	8	300	47.6	12	510	29
Basidiospores	14	590	42.8	5	200	31.7	24	1000	56.8
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	4	200	14.5	2	80	12.7	16*	210*	11.9
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	1	40	6.3	1	40	2.3
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	1*	10*	1.6	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Torula-like	-	-	-	-	-	-	-	-	-
Total Fungi	**32**	**1380**	**100**	**17**	**630**	**100**	**53**	**1760**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	1	40	-	-	-	-	2	80	-
Pollen	-	-	-	-	-	-	1	40	-
Analyt. Sensitivity 600x	-	42	-	-	42	-	-	42	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

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

No discernable field blank was submitted with this group of samples.



Abubakar Barry, Microbiology Lab 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.

Samples analyzed by EMSL Analytical, Inc. Beltsville, MD AIHA-LAP, LLC-EMLAP Accredited #102891

Initial report from: 12/14/2020 09:33 AM

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

EMSL Analytical, Inc.

10768 Baltimore Avenue Beltsville, MD 20705
Tel/Fax: (301) 937-5700 / (301) 937-5701
http://www.EMSL.com / beltsvillelab@emsl.com

EMSL Order: 192011796
Customer ID: TIDE50
Customer PO:
Project ID:

Attention: Skanda Abeyeskere
Tidewater, Inc.
6625 Selnick Drive
Suite A
Elkridge, MD 21075
Project: SAMUEL CHASE ELEMENTARY

Phone: (410) 540-8700
Fax: (410) 997-8713
Collected Date: 11/18/2020
Received Date: 11/30/2020
Analyzed Date: 12/07/2020

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

	192011796-0007			192011796-0008			192011796-0009		
Client Sample ID:	SCES-7			SCES-8			SCES-9		
Volume (L):	75			75			75		
Sample Location:	RM 24			RM 21			RM 14		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	2	80	0.7	1	40	0.9	1	40	9.5
Aspergillus/Penicillium	163	6880	62.7	58	2400	56.6	2	80	19
Basidiospores	25	1100	10	10	420	9.9	6	300	71.4
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	68	2900	26.4	31	1300	30.7	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	1	40	0.9	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	1*	10*	0.1	1	40	0.9	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Torula-like	-	-	-	-	-	-	-	-	-
Total Fungi	**259**	**10970**	**100**	**102**	**4240**	**100**	**9**	**420**	**100**
Hyphal Fragment	3	100	-	2	80	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	42	-	-	42	-	-	42	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	2	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	2	-	-	1	-

Sample Comment: 192011796-0008 Aspergillus conidiophores present in sample.

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

No discernable field blank was submitted with this group of samples.

Abubakar Barry, Microbiology Lab Manager
or other Approved Signatory

Initial report from: 12/14/2020 09:33 AM

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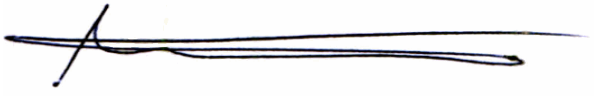
Analyzed Date: 12/07/2020

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

Lab Sample Number:	192011796-0010			192011796-0011		
Client Sample ID:	SCES-10			SCES-BG		
Volume (L):	75			75		
Sample Location:	RM 11			OUTDOORS		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	1	40	1.3	-	-	-
Ascospores	3	100	3.4	-	-	-
Aspergillus/Penicillium	14	590	19.8	1	40	4.1
Basidiospores	34	1400	47	15	630	64.3
Bipolaris++	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-
Cladosporium	17	720	24.2	6	300	30.6
Curvularia	-	-	-	-	-	-
Epicoccum	1*	10*	0.3	-	-	-
Fusarium	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-
Myxomycetes++	2	80	2.7	-	-	-
Pithomyces++	-	-	-	1*	10*	1
Rust	1	40	1.3	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-
Torula-like	-	-	-	-	-	-
Total Fungi	**73**	**2980**	**100**	**23**	**980**	**100**
Hyphal Fragment	-	-	-	2	80	-
Insect Fragment	2*	30*	-	1	40	-
Pollen	1	40	-	1	40	-
Analyt. Sensitivity 600x	-	42	-	-	42	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-

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

No discernable field blank was submitted with this group of samples.



Abubakar Barry, Microbiology Lab Manager
or other Approved Signatory

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Samples analyzed by EMSL Analytical, Inc. Beltsville, MD AIHA-LAP, LLC-EMLAP Accredited #102891

Initial report from: 12/14/2020 09:33 AM

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

OrderID: 192011796

Microbiology Chain of Custody

EMSL Order Number (*Lab Use Only*): 192011796

PHONE:
FAX:

Company : Tidewater Inc	**EMSL-Bill to:** ☐ Different ☐ Same If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 6625 Selnick Drive, Suite A	
City: Elkridge **State/Province:** MD	**Zip/Postal Code:** **Country:**
Report To (Name): Skanda Abeyesekere	**Telephone #:**
Email Address: skanda@tideh2o.net	**Fax #:** **Purchase Order:**
Project Name/Number: SAMUEL CHASE ELEMENTARY	**Please Provide Results:** ☐ FAX ☑ E-mail ☐ Mail
U.S. State Samples Taken: Maryland	**Connecticut Samples:** ☐ Commercial ☐ Residential

Turnaround Time (TAT) Options* - Please Check

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

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

Non Culturable Air Samples (Spore Traps) – Test Codes

• **M001** Air-O-Cell	• **M173** Allegro M2	• **M004** Allergenco	• **M032** Allergenco-D	• **M172** Versa Trap
• **M049** BioSIS	• **M003** Burkard	• **M043** Cyclex	• **M002** Cyclex-d	
• **M030** Micro 5	• **M174** MoldSnap	• **M176** Relle Smart	• **M130** Via-Cell	

Other Microbiology Test Codes

• **M041** Fungal Direct Examination	• **M014** Endotoxin Analysis	• **M029** *Enterococci*
• **M005** Viable Fungi ID and Count	• **M015** Heterotrophic Plate Count	• **M019** Fecal Coliform
• **M006** Viable Fungi ID and Count (Speciation)	• **M180** Real Time Q-PCR-ERMI 36	• **M133** MRSA Analysis
• **M007** Culturable Fungi	• Panel	• **M028** *Cryptococcus neoformans*
• **M008** Culturable Fungi (Speciation)	• **M018** Total Coliform	Detection
• **M009** Gram Stain Culturable Bacteria	(Membrane Filtration)	• **M120** *Histoplasma capsulatum*
• **M010** Bacterial Count and ID – 3 Most	• **M020** Fecal *Streptococcus*	Detection
Prominent	(Membrane Filtration)	• **M033-39** Allergen Testing
• **M011** Bacterial Count and ID – 5 Most	• **M210-215** *Legionella* Detection	• **M044** Group Allergen
Prominent	• **M026** Recreational Water Screen	(Cat, Dog, Cockroach, Dustmites)
• **M013** Sewage Contamination in Buildings	• **M027** Mycotoxin Analysis	• **Other** See Analytical Price Guide

Preservation Method (Water):

Name of Sampler: Skanda Abeyesekere **Signature of Sampler:**

Sample #	Sample Location	Sample Type	Test Code	Volume/Area	Date/Time Collected
Example: A1	Kitchen	Air	M001	75L	1/1/12 4:00 PM
SCES-1	Multipurpose Room	Air	M032	75.0	11/18/2011
SCES-2	Cafeteria				
SCES-3	Room 103				
SCES-4	Room 106				
SCES-5	Room 110				
SCES-6	Main Office				
SCES-7	Room 24				
SCES-8	Room 21				
SCES-9	Room 19				

Client Sample # (s): 9 **Total # of Samples:** 11

Relinquished (Client): **Date:** 11/18/2011 **Time:** 12:02 p.m.

Received (Client): K. Johnson Fed Ex **Date:** **Time:**

Comments:

RECEIVED
EMSL ANALYTICAL, INC.
BELTSVILLE, MD
2011 NOV 23 A 8:00

OrderID: 192011796

Microbiology Chain of Custody

EMSL Order Number *(Lab Use Only)*:

PHONE:
FAX:

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

Sample #	Sample Location	Sample Type	Test Code	Volume/Area	Date/Time Collected
[illegible]-16	Room 11	Air	M032	75.0	11/18/2020
[illegible]	Outdoors	Air	M032	75.0	11/18/2020

**Comments/Special Instructions:

EMSL Analytical, Inc.

5221 Militia Hill Road Plymouth Meeting, PA 19462
Tel/Fax: (610) 828-3102 / (610) 828-3122
http://www.EMSL.com / plymouthmeetinglab@emsl.com

EMSL Order: 182100738
Customer ID: TIDE50
Customer PO:
Project ID:

Attention: Skanda Abeyeskere
Tidewater, Inc.
6625 Selnick Drive
Suite A
Elkridge, MD 21075
Project: PGCPS Samuel Chase Elementary School

Phone: (410) 540-8700
Fax: (410) 997-8713
Collected Date:
Received Date: 03/02/2021
Analyzed Date: 03/03/2021

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

Lab Sample Number:	182100738-0001			182100738-0002			182100738-0003		
Client Sample ID:	SCES-6			SCES-4			SCES-7		
Volume (L):	75			75			75		
Sample Location:	Main Office			Room 106			Room 24		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	1*	10*	3.8	-	-	-	-	-	-
Aspergillus/Penicillium	-	-	-	-	-	-	-	-	-
Basidiospores	5	200	76.9	1	40	50	6	300	100
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	1	40	15.4	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	1*	10*	3.8	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	1	40	50	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Spadicoides	-	-	-	-	-	-	-	-	-
Total Fungi	**8**	**260**	**100**	**2**	**80**	**100**	**6**	**300**	**100**
Hyphal Fragment	-	-	-	-	-	-	1*	10*	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	42	-	-	42	-	-	42	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	2	-	-	2	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

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

No discernable field blank was submitted with this group of samples.

Kevin Ream, Laboratory Manager
or other Approved Signatory

Initial report from: 03/03/2021 02:07 PM

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

Lab Sample Number:	182100738-0004			182100738-0005			182100738-0006		
Client Sample ID:	SCES-8			SCES-10			SCES-3		
Volume (L):	75			75			75		
Sample Location:	Room 21			LL 11			Room 103		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	6	300	22.9	-	-	-	-	-	-
Aspergillus/Penicillium	7	300	22.9	-	-	-	-	-	-
Basidiospores	9	400	30.5	6	300	100	6	300	100
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	8	300	22.9	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Spadicoides	1*	10*	0.8	-	-	-	-	-	-
Total Fungi	**31**	**1310**	**100**	**6**	**300**	**100**	**6**	**300**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	1*	10*	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	42	-	-	42	-	-	42	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	2	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

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

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Kevin Ream, Laboratory Manager
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Samples analyzed by EMSL Analytical, Inc. Plymouth Meeting, PA AIHA-LAP, LLC-EMLAP Accredited #178659

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

Lab Sample Number:	**182100738-0007**		
Client Sample ID:	**SCES-BG**		
Volume (L):	**75**		
Sample Location:	**Background**		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-
Ascospores	-	-	-
Aspergillus/Penicillium	1	40	25
Basidiospores	2	80	50
Bipolaris++	-	-	-
Chaetomium	-	-	-
Cladosporium	1	40	25
Curvularia	-	-	-
Epicoccum	-	-	-
Fusarium	-	-	-
Ganoderma	-	-	-
Myxomycetes++	-	-	-
Pithomyces++	-	-	-
Rust	-	-	-
Scopulariopsis/Microascus	-	-	-
Stachybotrys/Memnoniella	-	-	-
Unidentifiable Spores	-	-	-
Zygomycetes	-	-	-
Spadicoides	-	-	-
Total Fungi	**4**	**160**	**100**
Hyphal Fragment	1	40	-
Insect Fragment	-	-	-
Pollen	-	-	-
Analyt. Sensitivity 600x	-	42	-
Analyt. Sensitivity 300x	-	13*	-
Skin Fragments (1-4)	-	1	-
Fibrous Particulate (1-4)	-	1	-
Background (1-5)	-	1	-

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

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Kevin Ream, Laboratory Manager
or other Approved Signatory

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OrderID: 182100738

Microbiology Chain of Custody

EMSL Order Number (*Lab Use Only*):

182100738

PHONE
FAX

Company: Tidewater Inc.	**EMSL-Bill to:** ☐ Different ☐ Same If Bill to is Different note instructions in Comments**
Street: 6625 Selnick Drive, Suite A	*Third Party Billing requires written authorization from third party*
City: Elkridge **State/Province:** MD	**Zip/Postal Code:** **Country:**
Report To (Name): Skanda Abeyesekere	**Telephone #:**
Email Address: skanda@tideh2o.net	**Fax #:** **Purchase Order:**
Project Name/Number: PGCPS Samuel Chase	**Please Provide Results:** ☐ FAX ☐ E-mail ☐ Mail
U.S. State Samples Taken: MD Elementary school	**Connecticut Samples:** ☐ Commercial ☐ Residential

Turnaround Time (TAT) Options* - Please Check

☐ 3 Hour | ☐ 6 Hour | ■ 24 Hour | ☐ 48 Hour | ☐ 72 Hour | ☐ 96 Hour | ☐ 1 Week | ☐ 2 Week

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

Non Culturable Air Samples (Spore Traps) – Test Codes

- **M001** Air-O-Cell
- **M049** BioSIS
- **M030** Micro 5
- **M173** Allegro M2
- **M003** Burkard
- **M174** MoldSnap
- **M004** Allergenco
- **M043** Cyclex
- **M176** Reile Smart
- **M032** Allergenco-D
- **M002** Cyclex-d
- **M130** Via-Cell
- **M172** Versa Trap

Other Microbiology Test Codes

- **M041** Fungal Direct Examination
- **M005** Viable Fungi ID and Count
- **M006** Viable Fungi ID and Count (Speciation)
- **M007** Culturable Fungi
- **M008** Culturable Fungi (Speciation)
- **M009** Gram Stain Culturable Bacteria
- **M010** Bacterial Count and ID – 3 Most Prominent
- **M011** Bacterial Count and ID – 5 Most Prominent
- **M013** Sewage Contamination in Buildings
- **M014** Endotoxin Analysis
- **M015** Heterotrophic Plate Count
- **M180** Real Time Q-PCR-ERMI 36 Panel
- **M018** Total Coliform (Membrane Filtration)
- **M020** Fecal *Streptococcus* (Membrane Filtration)
- **M210-215** *Legionella* Detection
- **M026** Recreational Water Screen
- **M027** Mycotoxin Analysis
- **M029** *Enterococci*
- **M019** Fecal Coliform
- **M133** MRSA Analysis
- **M028** *Cryptococcus neoformans* Detection
- **M120** *Histoplasma capsulatum* Detection
- **M033-39** Allergen Testing
- **M044** Group Allergen (Cat, Dog, Cockroach, Dustmites)
- **Other** See Analytical Price Guide

Preservation Method (Water):

Name of Sampler: SKANDA [illegible] **Signature of Sampler:** [signature]

Sample #	Sample Location	Sample Type	Test Code	Volume/Area	Date/Time Collected
Sample: A1	Kitchen	Air	M001	75L	1/1/12 4:00 PM
		Air	M032	75.0	
~~SCES-1~~	~~Media Center~~ /	~~Air~~	M032	75.0	02/27/21
SCES-6	Main office	↓	↓	"	↓
SCES-4	Room 106				
SCES-7	Room 24				
SEES-8	Room 21				
SCES-10	LL 11				
SCES-3	Room 103				
SCES-BG	Background	↓	↓	↓	↓

Client Sample # (s): ~~8~~ 7	**Total # of Samples:** ~~8~~ 7
Relinquished (Client): [signature]	**Date:** 02/27/21 **Time:** 8:00 PM
Received (Client): [signature]	**Date:** 3·2·21 **Time:** 10:30
Comments:	

Fedex
7842 3037 2122

182100738

ORIGIN ID:BCBA (443) 983-0392
SKANDA ABEYESEKERE

6625 BELNICK DR STE A

ELKRIDGE, MD 21075
UNITED STATES US

SHIP DATE: 01MAR21
ACTWGT: 1.30 LB
CAD: 6880388/SSF02121

BILL THIRD PARTY

10 **EMSL ANALYTICAL, INC.**
EMSL ANALYTICAL, INC.
5221 MILITIA HILL RD

PLYMOUTH MEETING PA 19462

(610) 828-3102 REF:
INV:
PO: DEPT:

FedEx Express

E

TUE - 02 MAR 10:30A
PRIORITY OVERNIGHT

S

TRK# 0201 **7842 3037 2122**

17 QFWA

19462
PA-US **PHL**

Align bottom of peel and stick airbill or pouch here

FedEx Express

RT 366 1 10:30 B
FZ 2122 03.02

EMSL Analytical, Inc.

10768 Baltimore Avenue Beltsville, MD 20705
Tel/Fax: (301) 937-5700 / (301) 937-5701
http://www.EMSL.com / beltsvillelab@emsl.com

EMSL Order: 192103056
Customer ID: TIDE50
Customer PO:
Project ID:

Attention: Skanda Abeyeskere
Tidewater, Inc.
6625 Selnick Drive
Suite A
Elkridge, MD 21075
Project: PGCPS SAMUEL CHASE ELEMENTARY SCHOOL

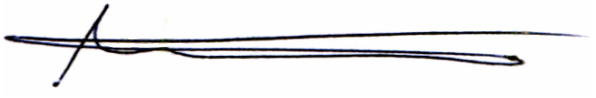
Phone: (410) 540-8700
Fax: (410) 997-8713
Collected Date: 04/01/2021
Received Date: 04/02/2021
Analyzed Date: 04/02/2021

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

Lab Sample Number:	192103056-0001			192103056-0002		
Client Sample ID:	SCES-1			SCES-BG		
Volume (L):	75			75		
Sample Location:	RM 21			BACKGROUND		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-
Ascospores	2	90	4.5	51	2200	16.2
Aspergillus/Penicillium	2	90	4.5	8	300	2.2
Basidiospores	42	1800	90.9	253	11000	80.9
Bipolaris++	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-
Cladosporium	-	-	-	2	90	0.7
Curvularia	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-
Rust	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-
Total Fungi	**46**	**1980**	**100**	**314**	**13590**	**100**
Hyphal Fragment	1	40	-	2	90	-
Insect Fragment	-	-	-	-	-	-
Pollen	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	44	-	-	44	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-
Background (1-5)	-	1	-	-	2	-

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

No discernable field blank was submitted with this group of samples.



Abubakar Barry, Microbiology Lab 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.

Samples analyzed by EMSL Analytical, Inc. Beltsville, MD AIHA-LAP, LLC-EMLAP Accredited #102891

Initial report from: 04/03/2021 10:16 AM

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

OrderID: 192103056

Microbiology Chain of Custody

EMSL Order Number (*Lab Use Only*):

192103056

PHONE:
FAX:

Company: Tidewater Inc.	**EMSL-Bill to:** ☐ Different ☒ Same If Bill to is Different note instructions in Comments**
Street: 6625 Selnick Drive, Suite A	*Third Party Billing requires written authorization from third party*
City: Elkridge **State/Province:** MD	**Zip/Postal Code:** **Country:**
Report To (Name): Skanda Abeyesekere	**Telephone #:**
Email Address: skanda@tideh2o.net	**Fax #:** **Purchase Order:**
Project Name/Number: PGCPS SAMUEL CHASE	**Please Provide Results:** ☐ FAX ☒ E-mail ☐ Mail
U.S. State Samples Taken: MD ELEMENTARY School	**Connecticut Samples:** ☐ Commercial ☐ Residential

Turnaround Time (TAT) Options* - Please Check

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

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- **M029** *Enterococci*
- **M019** Fecal Coliform
- **M133** MRSA Analysis
- **M028** *Cryptococcus neoformans* Detection
- **M120** *Histoplasma capsulatum* Detection
- **M033-39** Allergen Testing
- **M044** Group Allergen (Cat, Dog, Cockroach, Dustmites)
- **Other** See Analytical Price Guide

Preservation Method (Water):

SKANDA ABEYESEKERE
Name of Sampler:

Signature of Sampler:

Sample #	Sample Location	Sample Type	Test Code	Volume/Area	Date/Time Collected
SCES-1	Room 21	Air	M032	75.0	04/01/2021
SCES-BG	Background	Air	M032	75.0	04/01/2021

Environmental Monitoring Systems 1.800.283.3003 www.emssales.net
Remove Label and Connect Tubing **BOTTOM** Peel Here

Client Sample # (s): 2 - **Total # of Samples:** 2

Relinquished (Client): **Date:** 04/01/2021 **Time:** 10:

Received (Client): Fed Ex **Date:** **Time:**

Comments:

RECEIVED
EMSL ANALYTICAL, INC.
BELTSVILLE, MD
2021 APR -2 A 10:22

APPENDIX C

INSTRUMENT CALIBRATION CERTIFICATES

TSI P/N 2300157

CERTIFICATE OF CALIBRATION AND TESTING

TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA
Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

ENVIRONMENT CONDITIONS		
TEMPERATURE	74.1 (23.4)	°F (°C)
RELATIVE HUMIDITY	26	%RH
BAROMETRIC PRESSURE	29.26 (990.9)	inHg (hPa)

MODEL	9565-X
SERIAL NUMBER	9565X1945002

☒ AS LEFT ☒ IN TOLERANCE
☐ AS FOUND ☐ OUT OF TOLERANCE

-- CALIBRATION VERIFICATION RESULTS --

THERMO COUPLE^ — **SYSTEM PRESSURE01-01** — *Unit: °F (°C)*

#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	71.6 (22.0)	71.6 (22.0)	69.6~73.6 (20.9~23.1)				

BAROMETRIC PRESSURE — **SYSTEM PRESSURE01-01** — *Unit: inHg (hPa)*

#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	29.26 (990.9)	29.26 (990.9)	28.67~29.85 (970.9~1010.8)				

^ *Circuit portion of temperature measurement only, not including probe.*

TSI does hereby certify that the above described instrument conforms to the original manufacturer's specification (not applicable to As Found data) and has been calibrated using standards whose accuracies are traceable to the United States National Institute of Standards and Technology (NIST) or has been verified with respect to instrumentation whose accuracy is traceable to NIST, or is derived from accepted values of physical constants. TSI's calibration system is registered to ISO-9001:2015

Measurement Variable	System ID	Last Cal.	Cal. Due	Measurement Variable	System ID	Last Cal.	Cal. Due
DC Voltage	E003299	06-06-19	12-31-20	DC Voltage	E003300	06-06-19	12-31-20
Temperature	E004626	01-09-19	01-31-20	Pressure	E003302	08-07-19	02-29-20
Pressure	E003303	08-26-19	02-29-20				

Rose Germain — CALIBRATED

November 8, 2019 — DATE

Doc. ID CERT_GEN_WCC_TM

TSI P/N 2300157

CERTIFICATE OF CALIBRATION AND TESTING

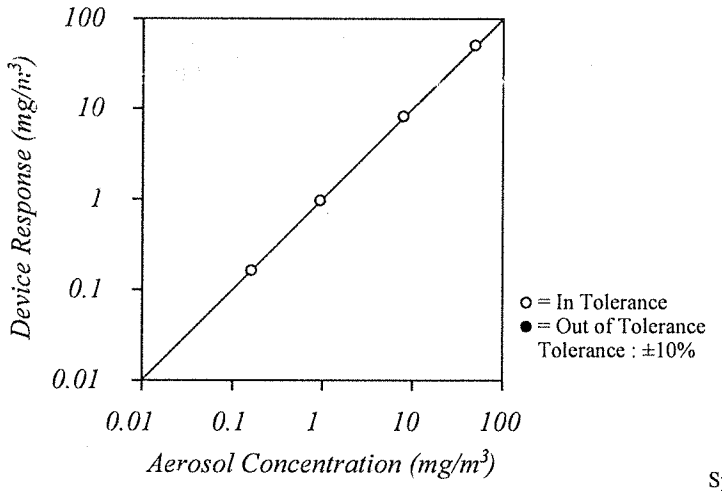
TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA
Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

Environment Conditions		
Temperature	75.83 (24.4)	°F (°C)
Relative Humidity	43.6	%RH
Barometric Pressure	28.93 (979.7)	inHg (hPa)

Model	**8534**
Serial Number	**8534170101**

☒ As Left ☒ In Tolerance
☐ As Found ☐ Out of Tolerance

Concentration Linearity Plot



System ID: DTII01-02

FLOW AND PRESSURE VERIFICATION — SYSTEM DTII01-01

Parameter	Standard	Measured	Allowable Range	Parameter	Standard	Measured	Allowable Range
Flow lpm	3.00	3.03	2.88 ~ 3.12	Pressure kPa	97.8	97.8	92.95 ~ 102.73
Full Flow lpm	N/A	4.54	>3.80				

TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. There is no NIST standard for optical mass measurements. Calibration of this instrument performed by TSI has been done using emery oil and has been nominally adjusted to respirable mass per standard ISO 12103-1, A1 test dust (Arizona dust). Our calibration ratio is greater than 1.2:1

Measurement Variable	System ID	Last Cal.	Cal. Due
DC Voltage	E003314	01-15-20	01-31-21
Microbalance	M001324	10-03-18	10-31-20
3 um PSL	221853	n/a	n/a
Pressure	E003511	10-04-19	10-31-20
DC Voltage	E003315	01-15-20	01-31-21
Flowmeter	E005922	06-29-20	06-30-21
Microbalance	M001324	10-03-18	10-31-20
1 um PSL	698880	n/a	n/a
10 um PSL	212455	n/a	n/a

Measurement Variable	System ID	Last Cal.	Cal. Due
Photometer	E005612	08-19-20	02-28-21
1 um PSL	698880	n/a	n/a
10 um PSL	212455	n/a	n/a
Flowmeter	E005140	01-09-20	01-31-21
Photometer	E003433	09-15-20	03-31-21
DC Voltage(Keithley)	E002859	06-15-20	06-30-21
Pressure	E005651	07-06-20	07-31-21
3 um PSL	206030	n/a	n/a

David Farrell
Calibrated

September 24, 2020
Date

Certificate of Conformance

(X) Buck BioAire™ ( ) Buck BioSlide™

Serial number: B153043 **Date Issued:** 3-18-20

Flow Calibration

The instrument listed above is in conformance with factory specifications and the flow is set to nominal using a BUCK Calibrator which is N.I.S.T. traceable to A. P. Buck, Inc. Calibration Procedure APB-1, Ver. 6.2.

QA APPROVAL BY: Thomas J. Cranmer

A.P. BUCK, INC.
7101 Presidents Drive, Suite 110
Orlando, FL 32809
Phone: 407-851-8602 • Fax: 407-851-8910

BUCK
A.P. BUCK, INC.

APPENDIX D

RELEVANT CERTIFICATIONS

ABIH®

american board of industrial hygiene®

organized to improve the practice of industrial hygiene
proclaims that

Skandakumar Harshanath Abeyesekere

having met all requirements of
education, experience and examination, and
ongoing maintenance,
is hereby certified in the

COMPREHENSIVE PRACTICE
of
INDUSTRIAL HYGIENE

and has the right to use the designations

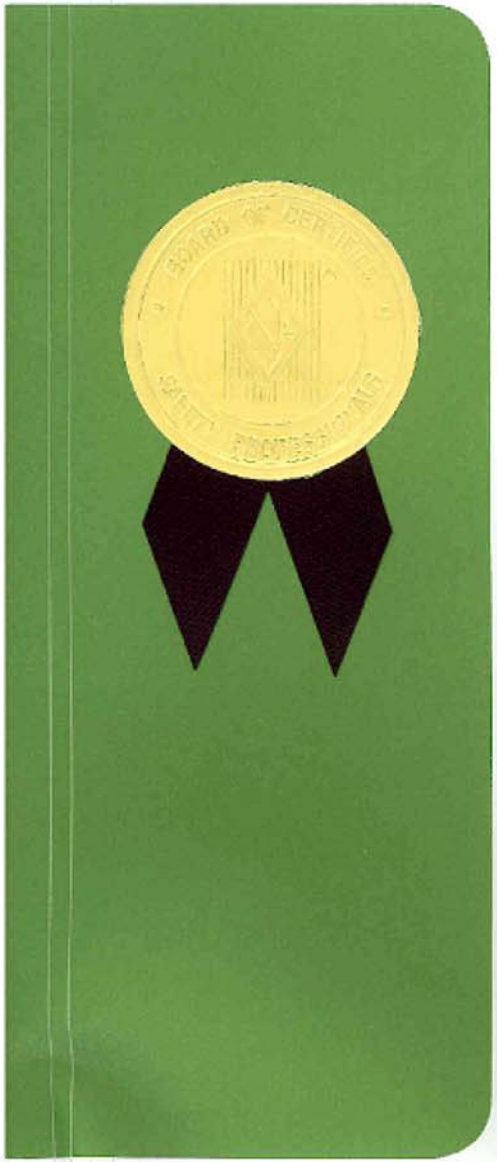
CERTIFIED INDUSTRIAL HYGIENIST

CIH®

Certificate Number	**9928 CP**
Awarded:	**May 11, 2011**
Expiration Date:	**December 1, 2021**

Susan Ripple
Chair, ABIH

Chief Executive Officer, ABIH



BOARD OF CERTIFIED SAFETY PROFESSIONALS

affirms that

Skandakumar Abeyesekere

Has applied for, met qualifications, and passed required examination(s) and is hereby authorized to use the designation

Certified Safety Professional®

in Comprehensive Practice

So long as this certificate is not suspended or revoked and the certificant renews this authorization annually and meets Continuance of Certification requirements.

Board of Examiners in witness whereof we have here unto set our hands and affixed the Seal of the Board this 7th Day of April, 2008

Paul S Adams — President

Linda Tapp — Secretary

20110 — CSP No.

INSTITUTE OF HAZARDOUS MATERIALS MANAGEMENT

THIS CERTIFIES THAT

Skandakumar Abeyeskere

HAS SUCCESSFULLY MET ALL THE REQUIREMENTS OF EDUCATION, EXPERIENCE AND EXAMINATION, AND IS HEREBY DESIGNATED A

CERTIFIED HAZARDOUS MATERIALS MANAGER
CHMM

INSTITUTE OF HAZARDOUS MATERIALS MANAGEMENT IHMM CORPORATE SEAL 1984 DISTRICT OF COLUMBIA

May 13, 2016
DATE OF CERTIFICATION

19053
CREDENTIAL NUMBER

May 31, 2021
CERTIFICATION EXPIRES

M. Patricia Buley
ACTING EXECUTIVE DIRECTOR

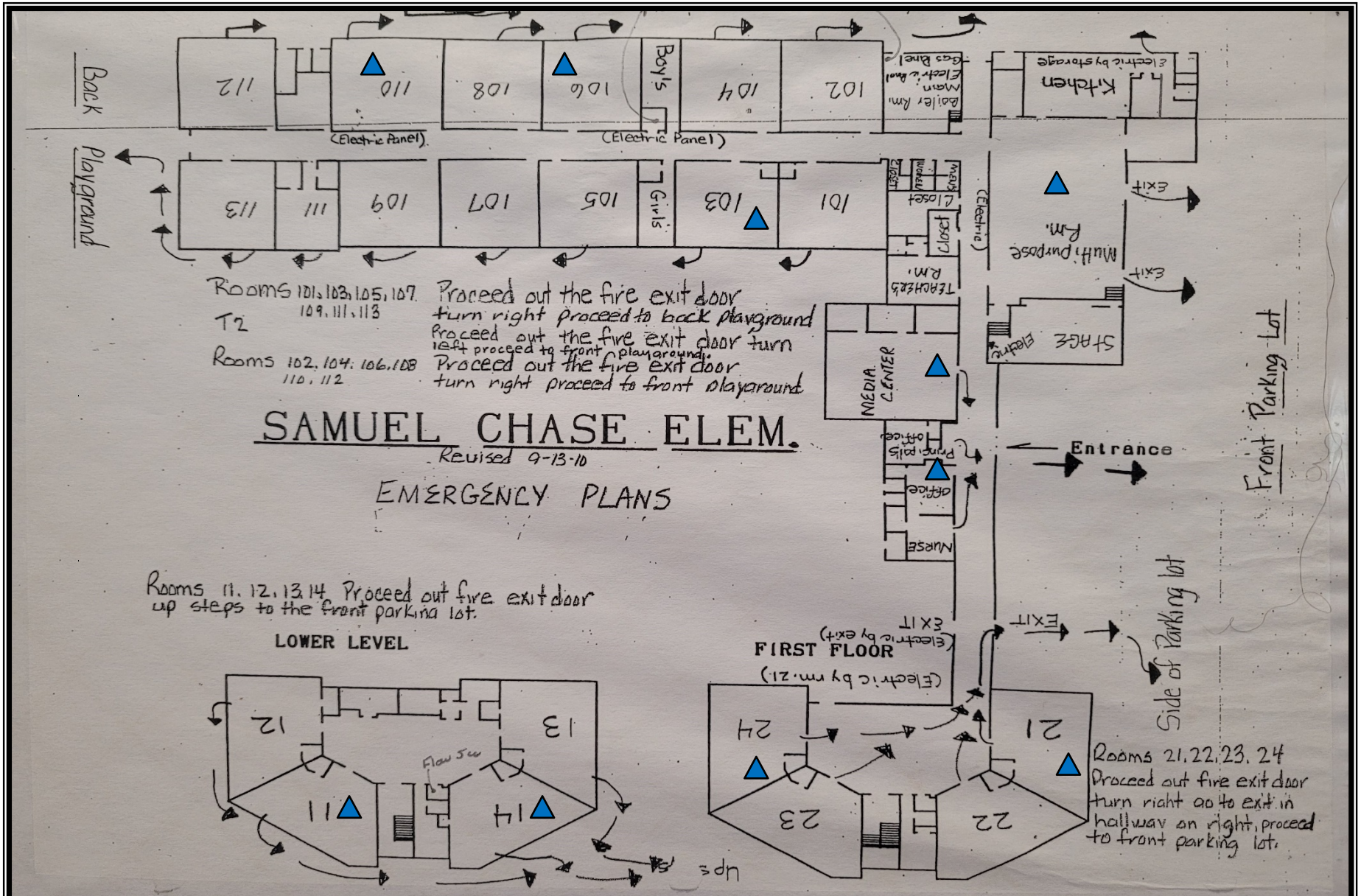
VALID SO LONG AS THIS CREDENTIAL IS RENEWED ACCORDING TO SCHEDULE AND IS NOT OTHERWISE REVOKED.

ANSI Accredited Program PERSONNEL CERTIFICATION

Accredited by the American National Standards Institute and the Council of Engineering and Scientific Specialty Boards

APPENDIX E

FLOOR PLAN WITH SAMPLING LOCATIONS



TIDEWATER INC	**Attachment C** **Samuel Chase Elementary School** **Floor Plan with Sampling Locations**	Scale: N/A Project #: 5419-028 Date: November 18, 2020	**General Notes** ▲ = Sample Location