Windjammer Environmental LLC
6710 Oxon Hill Road
Suite 210
Oxon Hill, MD 20745
(888) 270-8387
info@wjenviro.com

February 19, 2021

Alex Baylor
Environmental Specialist
PGCPS Environmental Safety Office
13306 Old Marlboro Pike
Upper Marlboro, MD 20772
Alex.baylor@pgcps.org

Re: IAQ and Mold Assessment Report (Retest)
Prince George's County Public Schools
Oxon Hill Staff Development Center

Dear Mr. Baylor,

Windjammer Environmental LLC (Windjammer) was contracted to conduct a visual assessment, measure indoor air quality (IAQ) parameters and sample for mold in a limited number of areas at the Oxon Hill Staff Development Center located at 7711 Livingston Road, Oxon Hill, MD 20745. This assessment is intended to check on effectiveness of cleaning operations in areas previously observed to have above normal ecology. This assessment was conducted by Certified Industrial Hygienist (CIH) Damien Hammond on February 16, 2021.

This assessment included:

- Measurement of temperature, relative humidity, carbon dioxide (CO_2) and carbon monoxide (CO)
- Collection of nonviable airborne mold samples; and
- Visual assessment of select areas.

Methods

A TSI IAQ-Calc Model 7545 was used to measure temperature, relative humidity, carbon dioxide (CO_2) and carbon monoxide (CO).

Air samples for non-viable airborne fungi were collected on Air-O-Cell cassettes using a Zefon Bio-Pump Plus portable sampler calibrated to collect 15 liters of air per minute (lpm). The sampling period for the all samples was five minutes.

Direct read instrumentation used were calibrated in accordance with the manufacturer's specifications prior to the start of this assessment.

All samples collected were hand delivered to and analyzed by EMSL of Beltsville, MD. EMSL is accredited by the American Industrial Hygiene Association (AIHA) for microbial analysis and participates in the Environmental Microbiology Laboratory Accreditation Program (EMLAP).

Guidance

The Occupational Safety and Health Administration's (OSHA) Permissible Exposure Limits (PELs) are the only enforceable regulatory standards for indoor air quality. However, other organizations such as the American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE) and the Environmental Protection Agency (EPA) have developed widely accepted consensus standards that can be used to assess the suitability of indoor air quality.

ASHRAE Standards

62.1-2013 and 55-2013 are consensus standards that outline acceptable practices for the design of ventilation systems in commercial and residential structures. Both documents were developed "to specify minimum ventilation rates and indoor air quality that will be acceptable to human occupants and are intended to minimize the potential for adverse health effects." The standards also consider chemical, physical, and biological contaminants and other factors that impact indoor air quality and affect occupant health and comfort.

ASHRAE 55-2013 recommends temperature and relative humidity ranges that are considered suitable for indoor air quality. Recommended ranges are as follows:

- Temperature be maintained between 67 and 82 degrees Fahrenheit (°F)
- Relative humidity to be maintained below 65%

Carbon Dioxide

CO_2 is widely used as a surrogate gas in the assessment of indoor air quality. It is a byproduct of respiration and can be used to determine the effectiveness and/or management of building ventilation systems. Based on ASHRAE recommendations, indoor CO_2 concentrations that are below 1000 parts per million (ppm) or have a differential of less than 700 ppm compared to outside concentrations are considered to be suitable.

For example, if outside CO_2 concentrations are measured at 380 ppm, then indoor CO_2 concentrations measured up to 1080 ppm would be considered suitable.

Carbon Monoxide

OSHA has established a PEL for CO of 35 ppm over a time weighted average (TWA) of 8 hours and a ceiling CO exposure limit of 200 ppm in a five-minute period. ASHARE has adopted the EPA National Ambient Air Quality Standard (NAAQS) for CO of 9 ppm when evaluating indoor air quality. In nonindustrial settings, the NAAQS standard is commonly used to assess the suitability of IAQ.

Nonviable Airborne Fungi (Mold)

There are no set regulatory limits established for acceptable airborne fungi levels. However, indoor levels within schools and offices are generally lower than outdoor levels except during the winter when outdoor mold may be less active or after rain events. The type and concentrations of the airborne microorganisms can be used to determine if there is a potential hazard to occupants which requires action.

Findings

Indoor Air Quality

Indoor air quality measurements collected were satisfactory with respect to temperature, relative humidity, carbon dioxide (CO_2), and carbon monoxide (CO). Recorded indoor air quality results are summarized in the following Table.

Table 1
Indoor Air Quality Measurement Summary
(Measurements Recorded on February 16, 2021)

Measurement Location	Temperature (°F)	Relative Humidity (%)	CO_2 (ppm)	CO (ppm)
Outside	43.2	55.5	480	0.0
Suite A	65.3	30.0	474	0.0
Suite G	68.6	31.9	482	0.0
Room 212	63.7	29.5	486	0.0

ppm – parts per million

Non-viable Airborne Fungi Sampling

Measured total indoor airborne fungi concentrations were determined have a normal ecology with indoor airborne fungi concentrations lower than measured total outdoor fungi concentrations at this time. A complete laboratory analysis report is available for viewing in Attachment A.

Visual Assessment

This facility is combination of offices and conference/meeting rooms. A walk-through of the hallways and a limited number of offices and public areas was carried out. No bathrooms, mechanical rooms, kitchen areas or storage areas were visited. There were a limited number of staff present, but most of the facility was vacant. The most highly occupied space was Room 107 where five staff members were performing sorting and packing activities. No unexpected odors were detected - however a mask was worn throughout the inspection. Except as noted, floors, walls and ceiling tiles observed were in acceptable condition. The housekeeping was acceptable.

The following areas for further investigation or improvement were noted:

- Room 212 – the painted wood windowsills are in poor condition which may be indicative of water damage. Storage on-top of the induction unit grilles.
- Stairwell #2 – Stained ceiling tile on second level.

Conclusions & Recommendations

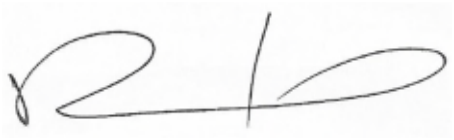
Indoor air quality spore trap measurements collected in all areas assessed were less than the levels measured outside the building. The results are an indication that the spores sampled in the rooms assessed are more likely to be originating in the outdoor environment rather than an interior source - reducing the chance of undetected overgrowth or colonization in the building. While there are no standards for airborne levels of mold, this approach of comparing indoor to outdoor, and looking at the species found, is one tool identified by organizations such as the American Industrial Hygiene Association when identifying assessment methods and improvement measurement in indoor air quality. Please note the following considerations for improvement.

- Identify the cause of any staining on ceiling tiles and fix.
- Repaint areas of damaged paint after fixing the reason that the paint became damaged.
- Do not block the air flow around the induction units.

At this time, no other recommendations are provided.

Windjammer appreciates the opportunity to provide this indoor air quality assessment. If you have any questions or comments, please feel free to contact us at (888) 270 - 8387.

Best regards,



Damien Hammond Sr, MS, CSP, CIH
President

Attachment A: Microbial Laboratory Report (Air)

Attachment A

Windjammer Environmental LLC
info@wjenviro.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: 192101423
Customer ID: WJEN42
Customer PO:
Project ID:

Attention: Damien Hammond
Windjammer Environmental
6710 Oxon Hill Rd
National Harbor, MD 20745

Phone: (888) 270-8387
Fax:
Collected Date: 02/16/2021
Received Date: 02/17/2021 10:13 AM
Analyzed Date: 02/17/2021

Project: PG COUNTY SCHOOLS 2021 OXON HILL STAFF

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

Lab Sample Number:	192101423-0001			192101423-0002			192101423-0003		
Client Sample ID:	021621-1			021621-2			021621-3		
Volume (L):	75			75			75		
Sample Location:	Outside			STE G			STE A		
Spore Types	**Raw Count**	**Count/M³**	**% of Total**	**Raw Count**	**Count/M³**	**% of Total**	**Raw Count**	**Count/M³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	1*	10*	1	-	-	-
Ascospores	260	11300	82.5	8	300	28.6	17	740	78.7
Aspergillus/Penicillium	2	90	0.7	1	40	3.8	-	-	-
Basidiospores	52	2300	16.8	11	480	45.7	5	200	21.3
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	1*	10*	1	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	16*	210*	20	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Total Fungi	**314**	**13690**	**100**	**38**	**1050**	**100**	**22**	**940**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	44	-	-	44	-	-	44	-
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	-

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

Abubakar Barry, Microbiology Laboratory Manager or other Approved Signatory

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

Initial report from: 02/19/2021 10:58 AM

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

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Project: PG COUNTY SCHOOLS 2021 OXON HILL STAFF

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

Lab Sample Number:	**192101423-0004**		
Client Sample ID:	**021621-4**		
Volume (L):	**75**		
Sample Location:	**RM 212**		
Spore Types	**Raw Count**	**Count/M³**	**% of Total**
Alternaria (Ulocladium)	-	-	-
Ascospores	1	40	10.5
Aspergillus/Penicillium	-	-	-
Basidiospores	7	300	78.9
Bipolaris++	-	-	-
Chaetomium	-	-	-
Cladosporium	1	40	10.5
Curvularia	-	-	-
Epicoccum	-	-	-
Fusarium	-	-	-
Ganoderma	-	-	-
Myxomycetes++	-	-	-
Pithomyces++	-	-	-
Rust	-	-	-
Scopulariopsis/Microascus	-	-	-
Stachybotrys/Memnoniella	-	-	-
Unidentifiable Spores	-	-	-
Zygomycetes	-	-	-
Total Fungi	**9**	**380**	**100**
Hyphal Fragment	-	-	-
Insect Fragment	-	-	-
Pollen	1	40	-
Analyt. Sensitivity 600x	-	44	-
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.

Abubakar Barry, Microbiology Laboratory Manager or other Approved Signatory

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

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EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Industrial Hygiene Chain of Custody

EMSL Order Number (Lab Use Only): 192101423

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE: 1-800-220-3675
FAX: (856) 786-5974

Report To Contact Name: Windjammer Environmental		**Bill To Company:** WINDJAMMER ENVIRONMENT	**Client ID #:**
Company Name: WINDJAMMER ENVIRONMENTAL LLC		**Attention To:** Windjammer Environmental	
Street: 6710 Oxon Hill Rd STE 210		**Street:** 6710 Oxon Hill Rd STE 210	
City: National Harbor	**State/Province:** MD **Zip/Postal Code:** 20745	**City:** National Harbor	**State/Province:** MD **Zip/Postal Code:** 20745
Phone : 8882708387 **Fax :**		**Phone:** 8882708387	**Fax:**
Project Name: PG COunty Schools 2021 OXON HILL STAFF		**Email Results To:** Hammond@wjenviro.com	**U.S. State where Samples Collected:** MD
# Samples in Shipment:	**Date of Shipment:**	**Purchase Order:**	**Sampled By (Signature):**

Turnaround Time (TAT) – Please Check: If No Selection Made, Standard 2 Week TAT Will Apply

☐ 2 Week ☐ 1 Week ☐ 4 Day ☐ 3 Day ☐ 2 Day ☒ 1 Day ☐ Other (Call Lab)

Media Type:

Manufacturer/Part #: **Lot #:**

Client Sample ID	Location/Description	Analyte / Method	Media	Flow (lpm)	Sample Time On	Sample Time Off	Volume / Area	Sample Type	Sample Date	Comments
021621-1	Outside		AOC	15			75	☒ Area ☐ Personal		
-2	STE G		↓	↓			↓	☒ Area ☐ Personal		
-3	STE A							☒ Area ☐ Personal		
-4	Rm 212							☒ Area ☐ Personal		
								☐ Area ☐ Personal		
								☐ Area ☐ Personal		
								☐ Area ☐ Personal		
								☐ Area ☐ Personal		

Note: Most NIOSH and OSHA methods require field blanks. It is the IH field sampler's responsibility to submit the proper number of field blanks and duplicates.

Released By	Date	Received By	Date
	2/17/21		

Comments:

Page 1 Of 1

OrderID: 192101423