

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

December 17, 2020

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 Prince George's County Public Schools Potomac Landing Elementary School

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 Potomac Landing Elementary School located at 12500 Fort Washington Road, Fort Washington, MD 20744. This assessment is intended to check on effectiveness of operations activities that are focused on preventing conditions that can lead to the development of an environment which is historically associated with an increase in reports of poor IAQ. This assessment was conducted by Certified Industrial Hygienist (CIH) Katherine Dietrich on December 4, 2020.

This assessment included:

- Measurement of temperature, relative humidity, carbon dioxide (CO<sub>2</sub>) 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<sub>2</sub>) 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 AMA of Lanham, MD. AMA 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<sub>2</sub> concentrations are measured at 380 ppm, then indoor CO<sub>2</sub> 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 distribution of airborne species of fungi found in indoor air is expected to be similar in proportion to outside distributions. 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<sub>2</sub>), 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 December 4, 2020)								
Measurement	Temperature	Relative Humidity	CO <sub>2</sub>	СО				
Location	(°F)	(%)	(ppm)	(ppm)				
Cafetorium	68.4	29.2	436	0.0				
Classroom 22*	71.5	26.3	425	0.0				
Library*	73.1	25.5	422	0.0				
Gymnasium	75.2	24.1	415	0.0				
Classroom 17*	72.6	26.8	420	0.0				
Room 15 (divider open)*	72.7	25.2	417	0.0				
Classroom 9	68.6	27.9	412	0.0				
Classroom 11*	67.4	28.7	411	0.0				
Classroom 5*	69.6	28.9	413	0.0				
Outdoors*	60.1	35.2	424	0.0				

ppm – parts per million

\* - spore-trap sample

### Non-viable Airborne Fungi Sampling

With the exception of the Library, measured total indoor airborne fungi concentrations were determined have a normal ecology and with indoor airborne fungi concentrations lower than measured total outdoor fungi concentrations at this time. The Library had ceiling tiles removed with containers positioned below exposed pipes which may be the rain leaders from the roof. There were also areas of stained ceiling tile. A complete laboratory analysis report is available for viewing in Attachment A.

### Visual Assessment

A walk-through of the hallways and a limited number of classrooms and public areas was carried out. No bathrooms, staff offices, mechanical rooms, kitchen areas or storage areas were visited. There were a limited number of staff present and no students.

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. This school is co-located with a community center. The housekeeping was acceptable.

The following areas for further investigation or improvement were noted:

• Library – missing and stained ceiling tiles. Placement of water collection containers in anticipation of water intrusion due to forecasted rain event.

### **Conclusions & Recommendations**

Except for the Library, indoor air quality spore trap measurements collected in all areas assessed were less than the levels measured outside the building and with the same predominate spore types found. This is 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 water leaks and staining on ceiling tiles in and around the Library and fix

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

Katherine (Kay) Dietrich, CIH, CSP Certified Industrial Hygienist

Attachment A: Microbial Laboratory Report (Air)

# **Attachment A**





## ASTM D7391-09 Spore Trap Analysis Report

Chain of Custody: Client: Address: Attention:	624372 Windjammer Env 6710 Oxon Hill R Suite 210 National Harbor, Kay Dietrich	load				Job Location: F Job Number: N	PGCPS IAQ Potomac Landii Not Provided Not Provided	ng Elementar	y Schoo	ol		Date Submitted: Person Submitting: Date Analyzed: Report Date:		12/04/20 Kay Die 12/10/20 12/11/20	rich )20		
AMA Sample # Client ID Analyst ID Collection Apparatus Sample Volume (L) Sample Condition Debris Loading Location		624372-1 201204-7 CD Air-O-Cell 75 Acceptable 2 Outdoor				AMA Sample # Client ID Analyst ID Collection Apparatus Sample Volume (L) Sample Condition Debris Loading Location	20 CD Air- 75 Aco 1	4372-2 1204-8 -O-Cell ceptable om 22				AMA Sample # Client ID Analyst ID Collection Apparatus Sample Volume (L) Sample Condition Debris Loading Location	20 CI Ai 75 Ao 1	r-O-Cell			
	Raw Ct	Trav/Flds	A.S.	sp/m <sup>3</sup>	%		Raw Ct	Trav/Flds	A.S.	sp/m <sup>3</sup>	%		Raw Ct	Trav/Flds	A.S.	sp/m <sup>3</sup>	%
Alterr	naria					Alternaria	a					Alternaria					
Ascosp	oores 10	15	52	520	13.3%	Ascospores	s 1	15	52	52	20%	Ascospores					
Basidiosp	oores 59	15	52	3068	78.7%	Basidiospores	s 1	15	52	52	20%	Basidiospores	3	15	52	156	20%
Bipolaris/Drechslera/H	lelm.					Bipolaris/Drechslera/Helm	۱.					Bipolaris/Drechslera/Helm.					
Chaeton	nium					Chaetomium	n					Chaetomium					
Cladospo	orium 4	15	52	208	5.3%	Cladosporium	n 2	15	52	104	40%	Cladosporium	10	15	52	520	66.7%
Curvu	Ilaria					Curvularia	a					Curvularia					
Penicillium / Asperg	gillus 2	15	52	104	2.7%	Penicillium / Aspergillus	s					Penicillium / Aspergillus					
Smuts/Periconia/Myxomyc	cetes					Smuts/Periconia/Myxomycetes	s 1	15	52	52	20%	Smuts/Periconia/Myxomycetes					
Stachybotrys/Memnor	niella					Stachybotrys/Memnoniella	a					Stachybotrys/Memnoniella					
♦ Uloclad	dium					Ulocladium	n					Ulocladium					
Unkn	nown					Unknowr	n					Unknown					
Bis	pora					Bispora	a					Bispora	2	15	52	104	13.3%
Pithom	yces					Pithomyces	s					Pithomyces					
Hyphal Fragme	ents*					Hyphal Fragments	*					Hyphal Fragments*					
Total Raw	<b>Ct:</b> 75		Total s	sp/m <sup>3</sup> :	3900	Total Raw Ct	t: 5	-	Total s	sp/m <sup>3</sup> :	260	Total Raw Ct:	15		Fotal s	sp/m <sup>3</sup> :	780
	Com	ments					Commer Very Light 1						Comme Very Light				





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Chain of Custody: Client: Address: Attention:	624372 Windjammer Env 6710 Oxon Hill F Suite 210 National Harbor, Kay Dietrich	Road				Job Location: P Job Number: N	PGCPS IAQ Potomac Land lot Provided lot Provided	ding Elementa	ary Sch	loc		Date Submitted: Person Submitting: Date Analyzed: Report Date:		12/04/20 Kay Dietr 12/10/20 12/11/20	ich 20		
AMA Sample # Client ID Analyst ID Collection Apparatus Sample Volume (L) Sample Condition Debris Loading Location		624372-4 201204-10 CD Air-O-Cell 75 Acceptable 1 Room 17				AMA Sample # Client ID Analyst ID Collection Apparatus Sample Volume (L) Sample Condition Debris Loading Location	20 C A 75 A	ir-O-Cell 5 cceptable				AMA Sample # Client ID Analyst ID Collection Apparatus Sample Volume (L) Sample Condition Debris Loading Location	201 CD Air- 75 Acc 1	372-6 204-12 O-Cell eptable om 11			
	Raw Ct	Trav/Flds	A.S.	sp/m <sup>3</sup>	%		Raw Ct	Trav/Flds	A.S.	sp/m <sup>3</sup>	%		Raw Ct	Trav/Flds	A.S.	sp/m <sup>3</sup>	%
Alterr	naria					Alternaria	1					Alternaria					
Ascosp	oores 2	15	52	104	33.3%	Ascospores	6					Ascospores					
Basidiosp	oores 3	15	52	156	50%	Basidiospores	s 2	15	52	104	100%	Basidiospores	1	15	52	52	100%
Bipolaris/Drechslera/H	lelm.					Bipolaris/Drechslera/Helm.						Bipolaris/Drechslera/Helm.					
Chaeton	nium					Chaetomium	ı					Chaetomium					
Cladospo	orium 1	15	52	52	16.7%	Cladosporium	ı					Cladosporium					
Curvu	ılaria					Curvularia	1					Curvularia					
Penicillium / Asperg	gillus					Penicillium / Aspergillus	3					Penicillium / Aspergillus					
Smuts/Periconia/Myxomyc	cetes					Smuts/Periconia/Myxomycetes	3					Smuts/Periconia/Myxomycetes	Present	15	52	<52	
Stachybotrys/Memnor	niella					Stachybotrys/Memnoniella	1					Stachybotrys/Memnoniella					
<b>♦</b> Uloclad	dium					Ulocladium	ı					Ulocladium					
Unkn	nown					Unknown	ı					Unknown					
Bis	pora					Bispora	1					Bispora					
Pithom	lyces					Pithomyces	6					Pithomyces					
Hyphal Fragme	ents*					Hyphal Fragments	*					Hyphal Fragments*	Present	15	52	<52	
Total Raw			Total s	sp/m <sup>3</sup> :	312	Total Raw Ct			Total s	sp/m <sup>3</sup> :	104	Total Raw Ct:	1		Fotal s		52
		ments					Comme Very Light	ents					Commen			•	





## ASTM D7391-09 Spore Trap Analysis Report

Client: Address:	624372 Windjammer Environr 6710 Oxon Hill Road Suite 210 National Harbor, MD : Kay Dietrich				Job Name: Job Location: Job Number: P.O. Number:	PGCPS IAQ Potomac Landing Elementary School Not Provided Not Provided	Date Submitted: Person Submitting: Date Analyzed: Report Date:	
Client ID Analyst ID Collection Apparatus Sample Volume (L) Sample Condition Debris Loading Location	201: CD Air- 75 Acc 1	D-Cell eptable						
	Raw Ct	Trav/Flds	A.S. sp	/m <sup>3</sup> %				
Alterna	aria							
Ascospo	res 1	15	52 5	52 25%				
Basidiospo	res 1	15	52 5	52 25%				
Bipolaris/Drechslera/He								
Chaetomi								
Cladospori								
Curvula								
Penicillium / Aspergil		15	52 1	04 50%				
Smuts/Periconia/Myxomyce								
Stachybotrys/Memnonie								
Ulocladi								
Unkno								
Bisp		45	50	50				
Pithomy	ces Present	15	52 <	52				
Hyphal Fragmer	nts*							
Total Raw			Total sp/r	<b>m<sup>3</sup>:</b> 208				
	Comment							





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Chain of Custody:	624372	Job Name:	PGCPS IAQ	Date Submitted:	12/04/2020
Client:	Windjammer Environmental	Job Location:	Potomac Landing Elementary School	Person Submitting:	Kay Dietrich
Address:	6710 Oxon Hill Road	Job Number:	Not Provided	Date Analyzed:	12/10/2020
	Suite 210	P.O. Number:	Not Provided	Report Date:	12/11/2020
	National Harbor, MD 20745				
Attention:	Kay Dietrich				

### **Spore Comparison Guide**

The criteria for these specifications are outlined, but not limited to those listed, below. Final specifications may differ from the listed criteria for certain samples. AMA Analytical Services, Inc. reserves the right to make changes to these criteria at any time without notice.

Normal ecology	Slightly above normal ecology	Moderately above normal ecology	Substantially above normal ecology	

Stachybotrys / Memnoniella, and Chaetomium	Other Spores* (Control Present)	Other Spores* (No Control)
1-4 Spores: Yellow	< 10 Spores: Insignificant (no color)	< 10 Spores: Insignificant (no color)
5-9 Spores: Orange	<= Control's spore count: Green	10-20 Spores: Yellow
10+ Spores: Red	Between Control and 2x Control: Yellow	20-50 Spores: Orange
	Between 2x Control and 3x Control: Orange	50+ Spores: Red
	3x+ Control: Red	

\*No evalutation is provided for the following spore types: Other, Other Colorless, and Unknown Fungi, and Misc

Interpretation of the data contained in this report is the sole responsibility of the client or the persons who conducted the field work. There are no federal or national standards for the number of fungal spores that may be present in the indoor environment. As a general rule and guideline that is widely accepted in the indoor air quality field, the numbers and types of spores that are present in the indoor environment should be comparable to those that are present outdoors at any given time. There will always be some mold spores present in "Normal" indoor environments. The purpose of sampling and counting spores is to help determine whether an abnormal condition exists within the indoor environment and if it does, to help pinpoint the area of contamination. Spore counts should not be used as the sole determining factor of mold contamination. There are many factors that can cause anomalies in the comparison of indoor and outdoor samples due to the dynamic nature of both of those environments.

This report is provided for informational and comparative purposes only and should not be relied upon for any other purpose. Sampling techniques, possible contaminants, unrepresentative samples and other similar or dissimilar factors may affect these results. With the statistical evaluation provided, as with all statistical comparisons and analyses, false-positive and false-negative results can and do occur. AMA Analytical Services, Inc. hereby disclaims any liability for any and all direct, indirect, punitive, incidental, special or consequential damages arising out of the use or interpretation of the data contained in, or any actions taken or omitted in reliance upon, this report.





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Chain of Custody:	624372	Job Name:	PGCPS IAQ	Date Submitted:	12/04/2020
Client:	Windjammer Environmental	Job Location:	Potomac Landing Elementary School	Person Submitting:	Kay Dietrich
Address:	6710 Oxon Hill Road	Job Number:	Not Provided	Date Analyzed:	12/10/2020
	Suite 210	P.O. Number:	Not Provided	Report Date:	12/11/2020
	National Harbor, MD 20745				
Attention:	Kay Dietrich				
	,				

### **General Comments, Disclaimers, and Footnotes**

Sample are analyzed following the instructions and guidelines outlined in ASTM 7391-09.
Acceptable: The sample was collected and delivered to the our location without disturbing the material on the sampling media. Unacceptable: 1. The sample trace (TR) has been disturbed. 2. The sample was damaged or otherwise unsuitable for analysis. 0 = No particulate matter detected; 1= >nd-~5% Particulate Loading; 2 = ~5%-25% Particulate Loading; 3 = ~25%-75% Particulate Loading; 4 = ~75%-90% Particulate Loading; 5 = >90% Particulate Loading
Based on their small size and very few distinguishing characteristics, Aspergillus and Penicillium cannot be differentiated by non-viable sampling methods. There are other types of spores whose morphology is similar to Aspergillus and Penicillium and cannot be differentiated by non-viable sampling methods. Examples of these similar spores are Acremonium, Paecilomyces, Wallemia, Trichoderma, Scopulariopsis, and Gliocladium. Smuts, Periconia and Myxomycetes are three different types of genera that have similar morphological characteristics. Bipolaris/Dreschlera/Helm: Bipolaris / Dreschlera / Helminthosporium are three different types of genera that have smiliar morphological characteristics. Other Colorless represents all colorless spores that are non-distinctive and unidentifiable. *Hyphal Fragments: A portion of the mycelium that becomes separated from the remainder of the thallus (vegetative body), each of which has the capacity to grow and form new individuals. Results for hyphal fragments are in fragments/m3 and are not incorporated in the total spore concentration. The droplet symbol () refers to water-intrusion indicator spores. These fungal spores, when found on indoor air samples, can be an indication of moisture sources and resultant fungal growth that may be problematic.
Analytical Sensitivity (A.S.): This is dependent on the volume of air collected, size of the trace, ocular diameter, and the amount of the trace that was analyzed. The value of "Present" indicated in the Raw Count column represents the presence of this spore type during the preliminary exam at 400x. The Raw Count converts to a whole number if the spore type is encountered again during the 600x-1,000x enumeration. The sp/m3concentration will be reported as less than the analytical sensitivity if "Present" is reported in the Raw Count. Results are reported to 3 significant figures. sp/m3: Spores per cubic meter. Uncertainty: for raw count in the range of 0-50 the SR is 0.375, 51-100 SR=0.333, 101-200 SR=0.257, >200 SR=0.245 All results are to be considered preliminary and subject to change unless signed by the Technical Director or Deputy. Analyst(s): Christopher Dell

Technical Director Tristan Ward

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from us. Sample types, locations, and collection protocols are based upon the information provided by the persons submitting them and, unless collected by personnel of these Laboratories, we expressly disclaim any knowledge and liability for the accuracy and completeness of this information. Residual sample material will be discarded in accordance with the appropriate regulatory guidelines, unless otherwise requested by the client.





## **MOLD SPORE DESCRIPTIONS**

#### Ascospores

Ascospores are spores formed inside an ascus (asci-plural) or sac-like cell which is contained inside a fruiting body called an ascocarp or an ascoma (ascomata-plural). An ascus typically contains a definite nuimber of ascospores, usually eight. Ascospores are unique in shape, size, and color as to the Genus/species they represent. These spores are specific to fungi classified as Ascomycetes. They are ubiquitous in nature. Many decay organic matter, others are plant or animal pathogens. They can grow indoors on damp materials. Release of ascospores are released by forcible ejection and dispersed by wind, water, animals and other agents. Health Effects: Depending on the Genera, Ascospores may be allergenic.

#### **Basidiospores**

Basidiospores are reproductive spores produced by a group of fungi called basidiomycetes. This group includes the mushrooms, shelf fungi and various other macrofungi. Basidipspores serve as the main air (wind) dispersal units for the fungi and their release is dependent upon moisture. The structure of the spore complex can develop in various manners resulting in different appearances. It is often found growing in soil, decaying plant debris, compost piles and fruit rot. Indoors, it can be found on water damaged building materials (chipboard /OSB, plywood, wallpaper, and glue) as well as on food items (dried foods, cheeses, fruits, herbs, spices, cereals). Health effects: Some basidiospores may produce toxins and can act as allergens. They have not been reported to be pathogens.

#### Bispora

Bispora is a widespread mitosporic fungus. It is found on dead wood and soil. Spores are brown, ellipsoidal, usually two-celled, with a thick dark brown septum or band.

#### Cladosporium

Cladosporium is the most common indoor and outdoor mold. The spores are wind dispersed and are often extremely abundant in outdoor air. Many species are commonly found on living and dead plant material. Indoors, they may grow on surfaces with high moisture or high humidity levels such as damp window sills, poorly ventilated bathrooms and soiled refrigerators. It produces powdery or velvety olive-green to brown or black colonies. The conidia (spores) vary depending on the species and are formed in simple or branching chains with multi-attachment points. Health Effects: Cladosporium species are rarely pathogenic to humans, but have been reported to occassionally cause sinusitis and pulmonary infections as well as infections of the skin and toenails. The airborne spores are significant allergens, and in large amounts they may severely affect asthmatics and people with respiratory diseases.

### Hyphal Fragments

Hyphal Fragments are segments or pieces of hyphae or mycelium that may have broken off during sampling (air, tape, dust). The mycelium is the entire mass of hyphae that makes up the vegetative body of a fungus. The presence of hyphal fragments may indicate the presence of viable mold.





### Penicillium/Aspergillus Like

Penicillium and Aspergillus are ubiquitous, filamentous fungi that are found in soil, decaying plant debris, compost piles, and in the air. Indoors, spores are commonly found in house dust, in water-damaged buildings (wallpaper, wallpaper glue, decaying fabrics, moist chipboards, and behind paint) as well as fruit and grains. They are the most common fungal genera, worldwide. Both produce chains of spores that are small, round to oval, colorless or slightly pigmented, and smooth to rough walled. These spores are indistinguishable between the two as well as other genera, such as Gliocladium, Trichoderma, Paecilomyces, and Scopulariopsis. They differ as to their conidiophores or fruiting bodies. While, Aspergillus spores are produced from phialides supported on conidia heads or swollen vesicles, Penicillium spores are produced on finger-like projections. Depending on species, typical colonies of Aspergillus are initially white and later turn to either shades of green, yellow, orange, brown or black. Texture is usually velvety to cottony. Typical colonies of Penicillium, other than Penicillium marneffei (yeast-like at 37oC), grow rapidly, white in color at first, later becoming bluish green with white borders with velvety to powdery textures depending on species. Some species produce radial patterns. Health Effects: Both Aspergillus and Penicillium are potential allergens. Several species of Aspergillus (A. flavus and A. parasiticus) produce aflatoxins or natually occurring mycotoxins that are toxic and carcinogenic. These are found in contaminated foodstuff and are hazardous to consumers. Penicillium has only one known species that is pathogenic to humans (P. marneffei) that causes lethal systemic infection (Penicilliosis) in immunocompromised individuals.

#### Pithomyces

Pithomyces is a cosmopolitan, dark-walled fungus often found growing outside in soil, decaying leaves, and grasses. It is rarely found growing indoors, but will grow on paper given the right conditions. Colonies grow rapidly, cottony in texture with light to dark brownish black surface color. Spores are single, oval yellow to dark brown, multi-celled, and usually rough. One identification feature of the spores is the resemblance to barrels. Another identifying character is beak-like structures on young spores. Spores of Pithomyces chartarum are most common and are identified by distinctive tranverse septa. This species has been linked to facial eczema in sheep. Health Effects: It is a potential but not well-studied allergen or human pathogen.

### Smuts/Periconia/Myxomycetes

Smuts, Periconia, and Myxomycetes spores are grouped together due to their similar round, brown morphology. Smuts are outdoor parasitic plant pathogens. They rarely grow indoors but may grow on host plants if appropriate conditions are present. They are parasitic plant pathogens. They can be found on cereal crops, grasses, flowing plants, weed, and other fungi. They can cause allergies. Periconia are found in soils, dead herbaceous stems and leaf spots, and grasses. They have wind dispersed dry spores. Their spores are abundant in the air but it is not known if they are allergenic. Myxomycetes are found on decaying logs, stumps and dead leaves. They have wind-dispersed dry spores and wet motile (amoebic phase) spores. During favorable conditions they move about like amoebae. They form dry airborne spores when conditions are unfavorable. They are rarely found indoors. Health Effects: They may cause Type 1 allergies (hay fever, asthma). No human infections have been reported.

Address         Balance (Definition of the Definition of the Definitio			OWI (410) 247-2024	159202 210 REV. 6.08
Client Name, Windjanmer Environmental       1. Job Name, BCC/PS. JAG.         Addres I: Still Oxon Hill R.d, Suite 210       2. Job Coasine. DOYOMGC Landon Results with Secondary District Schemol.         Addres I: Still Oxon Hill R.d, Suite 210       3. Job #         Addres I: Still Oxon Hill R.d, Suite 210       3. Job #         Addres I: Still Oxon Hill R.d, Suite 210       3. Job #         Addres I: Still Oxon Hill R.d, Suite 210       5. Submitted by: Kay Dietrich       Signuture:         Market Still Oxon Hill R.d, Suite Results with be provided as soon as technically tracking the solution.       Bend Addres Still Oxon Hill Results with be provided as soon as technically tracking.         Market Still Oxon Hill Results with Still Results with be provided as soon as technically tracking.       Bend Addres File Results Results with Be provided as soon as technically tracking.         Data Device Results with Be provided as soon as technically tracking.       Bend Addres File Results.       BEDWIT RO.         Data Device Results with Be provided as soon as technically tracking.       Bend Addres File Results.       BEDWIT RO.         Data Device Results with Bernet Results with Bernet Results with Bernet Results with Bernet Results.       Bernet Results and Results with Bernet Results and Results with Bernet Results.       Bernet Results and Results with Bernet Results and Results with Bernet Results.         Data Device Results With Second Results with Bernet Results and Results a	Focused on Results www.amalab.com AIHA (#100470) NVLAP (#101143-0) NY E 4475 Forbes Blvd. • Lanham, MD 20706	<b>UNAI</b>	N OF CUSTODY	(Please Refer To This Number For Inquires) (224372
Address 3:	Client Name: Windjammer Environ Address I: 6710 Oxon Hill Rd,	Suite 210	1. Job Name: <u>PGCPS</u> 2. Job Location: <u>Potomac</u> 3. Job #:	Landing Elementary School
AFTR ROURANCE EUSINESS HOURS       NORMALE EUSINESS HOURS       Decide Coordination Required By Non Biorey Alamany Will Be Made to Accomotany       Decide Coordination Repeats Alamany Sector 1 to . com while Coordination Repeats Repeats Alamany Sector 1 to . com while Coordination Repeats Repeats Alamany Sector 1 to . com while Coordination Repeats Repeats Repeats Alamany Sector 1 to . com while Coordination Repeats R	Address 3:			ich @ phone # <u>301-351-4213</u>
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CMALE - Please Indicate Filter Type:       Image: Control of the contro	Immediate Date Due: 124 Hours Time Due:	□ Immediate □ 3 Day □ Next Day ↓ 5 Day +1 7	Results Required By Noon (EveryAttempt Will Be	n Dinclude COC/Field Data Sheets with Report Diemail: dietrich @ WJENViro.com MAXXXX hammond@wjenviro.com
$\frac{201204-7}{-9} \text{ Wm } 22 \text{ Wm } 75 \text{ Wm } 22 \text{ Wm } 75 \text{ Wm } 22 \text{ Wm } 75 \text{ Wm } 22  W$	CM Air - Please Indicate Filter Type:         NIOSH 7400(QTY)         Fiberglass         EM Air - Please Indicate Filter Type:         AHERA         QTY)         NIOSH 7402         QTY)         Other (specify)         QTY)         EPA 600 - Visual Estimate         QTY)         EPA 600 - Visual Estimate         QTY)         Grav. Reduction ELAP 198.6         Other (specify)         Other (specify)         QTY         Grav. Reduction ELAP 198.6         QTY         ISC         Vermiculite         Asbestos Soil FLM_(Qual) FLM_TEM_(Qual)         FLMFORMATION	ELAP 198.4/Chaffie     NY State PLM/TEM     Residual Ash      TEM Dust     Qual. (pres/abs) Vacu     Qual. (s/area) Vacu     Qual. (s/area) Vacu     Qual. (s/area) Vacu     Qual. (s/area) Qual. (s/area) Qual.     (pres/abs)     Qual. (pres/abs)     Qual. (pres/abs)     Qual. (pres/abs)     Qual. (pres/abs)     Qual. (pres/abs)     Qual. (pres/abs)     Qual. (pres/abs)     Qual. (pres/abs)     Qual. (s/area) Qual.     (pres/abs)     Qual. (pres/ab	eld(QTY) A(QTY) cuum/Dust(QTY) um D5755-95(QTY) D6480-99(QTY) (QTY) d in good condition unless otherwise noted. ^C)	□ Pb Paint Chip(QTY)         □ Pb Air(QTY)         □ Pb Air(QTY)         □ Pb Soil/Solid(QTY)         □ Pb TCLP(QTY)         □ Drinking Water □ Pb(QTY) □ Cu(QTY) □ As(QTY)         □ Waste Water □ Pb(QTY) □ Cu(QTY) □ As(QTY)         □ Bo Furnace (Media)(QTY)         □ rollection Apparatus for Spore Traps/Air Samples:
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