

September 2, 2015

Mr. Bruce Gist  
Howard County Public School System  
10910 Route 108  
Ellicott City, MD 21043

RE: Tape Lift Sampling of Items found in Classroom 13 at Glenwood Middle School  
Project #J15-876

Dear Mr. Gist,

Aria Environmental, Inc. (AE) is pleased to present this report of findings for tape lift sampling and microbial analysis of items found in Classroom 13 at Glenwood Middle School located at 2680 Route 97 in Glenwood, Maryland. Dust and staining believed to be microbial growth was discovered on a nylon fabric kite and plastic storage bin in the storage area of Classroom 13. These items were delivered to AE's office on August 28, 2015 and tape lift samples were collected immediately by Michele Twilley, DrPH, CIH and Julie Barth, CIH, CSP, LEED Green Associate of AE. These samples were submitted for microbial spore identification and counting and particle characterization.

#### **Tape Lift Sampling**

Some light staining and dust were observed on the reverse side of the black leading edge of the kite and on the tail and streamers and some dust and residue of soil was observed inside the plastic bin. Tape lift samples were collected from the top and tail of the kite and from the bottom of the plastic bin using Mold Tape Slides™ from Environmental Monitoring Systems. Samples were submitted to Aerobiology Laboratory in Dulles, Virginia for analysis. The sample results are reported as the number of spores or other structures observed per field or cover slip with a ranking from few to numerous. Table 1 presents the results of the swab and tape lift sample analysis.

No fungal spores, hyphae, hyphal elements or conidiophores were observed on the tape lift samples. Hyphae are the vegetative mode of fungi, and hyphal elements are fragments of individual hyphae that have broken off. Conidiophores are specialized hyphae that produce spores.

Overall, these results do not indicate the presence of mold on the two items sampled (kite and plastic bin). Certificates of analysis are included as an attachment.

**Table 1 - Results of Microbial Tape Lift Samples from the Classroom 13  
Kite and Bin at Glenwood Middle School on August 28, 2015**

<b>Structures Observed</b>	<b>Plastic (Sterilite) Bin, Inside Bottom Tape Lift 01</b>	<b>Kite, Tail (yellow) Tape Lift 02</b>	<b>Kite, Top Edge (black) Tape Lift 03</b>
Comments	No fungal spores observed	No fungal spores observed	No fungal spores observed
Non-Biological Particle Characterization	Few non-fibrous material seen (5 per cover slip)	Occasional non-fibrous material seen (1-5 per cover slip)	Occasional fiberglass seen (1-5 per cover slip); Few non-fibrous material seen (5 per cover slip); Occasional synthetic seen (1-5 per cover slip)
Debris Rating	1	1	1

**Conclusions and Recommendations**

Tape lift samples were collected from two places from a nylon fabric kite and in one place from a plastic storage bin on August 28, 2015 by AE. These items had been discovered in Classroom 13 at Glenwood Middle School and were suspected as having mold growth. Tape lift samples were submitted for microbial spore identification and counting and particle characterization. Results indicate that none of the samples were observed to contain fungal spores or structures. These results do not indicate mold growth on the items; however, soil and dust were observed on them. The items should be cleaned as a precaution using a household-type detergent solution if they are to be reused. Otherwise, they can be disposed of or recycled.

Thank you for choosing Aria Environmental, Inc. for your industrial hygiene consulting needs. Should you have any questions about the information contained herein, please do not hesitate to contact us at 410-549-5774.

Sincerely,  
Aria Environmental, Inc.



Julie Barth, CIH, CSP, LEED Green Associate

Attachments

## ATTACHMENTS

Aria Environmental  
P.O. Box 286  
Woodbine, Maryland 21797  
Attn: Julie Barth  
Project: **J15-876 GMS / Glenwood MS**  
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected: 08/28/2015  
Date Received: 08/31/2015  
Date Analyzed: 08/31/2015  
Date Reported: 09/01/2015  
Project ID: 15020408  
Page 1 of 3

Client Sample #: 01  
Sample Location: Sterilite Bin  
Test: 1051, Surface - Qualitative Direct Microscopic Exam SOP 3.7: 24hr TAT

Lab Sample #: 15020408-001

Debris Rating: 1  
Comments: No fungal spores seen.

Client Sample #: 01  
Sample Location: Sterilite Bin  
Test: 1026, Non-biological Particle Characterization: 24hr TAT

Lab Sample #: 15020408-001

Results:	Observation
Few non-fibrous material seen	5 per cover slip

Debris Rating: 1

Client Sample #: 02  
Sample Location: Kite Yellow Tail  
Test: 1051, Surface - Qualitative Direct Microscopic Exam SOP 3.7: 24hr TAT

Lab Sample #: 15020408-002

Debris Rating: 1  
Comments: No fungal spores seen.

Client Sample #: 02  
Sample Location: Kite Yellow Tail  
Test: 1026, Non-biological Particle Characterization: 24hr TAT

Lab Sample #: 15020408-002

Results:	Observation
Occasional non-fibrous material seen	1-5 per cover slip

Debris Rating: 1

Client Sample #: 03  
Sample Location: Kite Top Black Edge  
Test: 1051, Surface - Qualitative Direct Microscopic Exam SOP 3.7: 24hr TAT

Lab Sample #: 15020408-003

Debris Rating: 1  
Comments: No fungal spores seen.

Aria Environmental  
P.O. Box 286  
Woodbine, Maryland 21797  
Attn: Julie Barth  
Project: **J15-876 GMS / Glenwood MS**  
Condition of Sample(s) Upon Receipt: Acceptable

Date Collected: 08/28/2015  
Date Received: 08/31/2015  
Date Analyzed: 08/31/2015  
Date Reported: 09/01/2015  
Project ID: 15020408

Page 2 of 3

Client Sample #: 03  
Sample Location: Kite Top Black Edge  
Test: 1026, Non-biological Particle Characterization: 24hr TAT

Lab Sample #: 15020408-003

Results:	Observation
Occasional Fiberglass seen	1-5 per cover slip
Few non-fibrous material seen	5 per cover slip
Occasional synthetic seen	1-5 per cover slip

Debris Rating: 1

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P.O. Box 286  
Woodbine, Maryland 21797  
Attn: Julie Barth  
Project: **J15-876 GMS / Glenwood MS**  
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Date Collected: 08/28/2015  
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Date Analyzed: 08/31/2015  
Date Reported: 09/01/2015  
Project ID: 15020408  
Page 3 of 3

## Footnotes and Additional Report Information

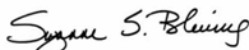
### Debris Rating Table

1	Minimal (<5%) particulate present	Reported values are minimally affected by particulate load.
2	5% to 25% of the trace occluded with particulate	Negative bias is expected. The degree of bias increases directly with the percent of the trace that is occluded.
3	26% to 75% of the trace occluded with particulate	Negative bias is expected. The degree of bias increases directly with the percent of the trace that is occluded.
4	75% to 90% of the trace occluded with particulate	Negative bias is expected. The degree of bias increases directly with the percent of the trace that is occluded.
5	Greater than 90% of the trace occluded with particulate	Quantification not possible due to large negative bias. A new sample should be collected at a shorter time interval or other measures taken to reduce particulate load.

1. Penicillium/Aspergillus group spores are characterized by their small size, round to ovoid shape, being unicellular, and usually colorless to lightly pigmented. There are numerous genera of fungi whose spore morphology is similar to that of the Penicillium/Aspergillus type. Two common examples would be Paecilomyces and Acremonium. Although the majority of spores placed in this group are Penicillium, Aspergillus, or a combination of both. Keep in mind that these are not the only two possibilities.
2. Ascospores are sexually produced fungal spores formed within an ascus. An ascus is a sac-like structure designed to discharge the ascospores into the environment, e.g. Ascobolus.
3. Basidiospores are typically blown indoors from outdoors and rarely have an indoor source. However, in certain situations a high basidiospore count indoors may be indicative of a wood decay problem or wet soil.
4. The Smut, Periconia, Myxomycete group is composed of three different groups whose spores have similar morphologies. Smuts are plant pathogens, Periconia is a relatively uncommon mold indoors, and Myxomycetes are not fungi but slime molds. Although these organisms do not typically proliferate indoors, their spores are potentially allergenic.
5. The colorless group contains colorless spores which were unidentifiable to a specific genus. Examples of this group include Acremonium, Aphanocladium, Beauveria, Chrysosporium, Engyodontium microconidia, yeast, some arthrospores, as well as many others.
6. Hyphae are the vegetative mode of fungi. Hyphal elements are fragments of individual Hyphae. They can break apart and become airborne much like spores and are potentially allergenic. A mass of hyphal elements is termed the mycelium. Hyphae in high concentration may be indicative of colonization.
7. Dash (-) in this report, under raw count column means 'not detected (ND)'; otherwise 'not applicable' (NA).
8. The positive-hole correction factor is a statistical tool which calculates a probable count from the raw count, taking into consideration that multiple particles can impact on the same hole; for this reason the sum of the calculated counts may be less than the positive hole corrected total.
9. Due to rounding totals may not equal 100%.
10. Minimum Reporting Limits (MRL) for BULKs, DUSTS, SWABS, and WATER samples are a calculation based on the sample size and the dilution plate on which the organism was counted. Results are a compilation of counts taken from multiple dilutions and multiple medias. This means that every genus of fungi or bacteria recovered can be counted on the plate on which it is best represented.
11. If the final quantitative result is corrected for contamination based on the blank, the blank correction is stated in the sample comments section of the report.
12. Analysis conducted on non-viable spore traps is completed using Indoor Environmental Standards Organization (IESO) Standard 2210.
13. The results in this report are related to this project and these samples only.
14. For samples with an air volume of < 100L, the number of significant figures in the result should be considered (2) two. For samples with air volumes between 100-999L, the number of significant figures in the result should be considered (3) three. For example, a sample with a result of 55,443 spr/m<sup>3</sup> from a 75L sample using significant figures should be considered 55,000. The same result of 55,443 from a 150L sample using significant figures should be considered 55,400 spr/m<sup>3</sup>.
15. If the In/Out ratio is greater than 100 times it is indicated >100/1, rather than showing the real value.

#### Terminology Used in Direct Exam Reporting

**Conidiophores are a type of modified hyphae from which spores are born. When seen on a surface sample in moderate to numerous concentrations they may be indicative of fungal growth.**



Suzanne S. Blevins, B.S., SM (ASCP)  
Laboratory Director

15 020408  
 15020408



LAB #192683 (CO)  
 LAB #102977 (GA)  
 LAB #163063 (VA)  
 LAB #210229 (AZ)

NVLAP Lab Code 200860-0 (CO)  
 NVLAP Lab Code 200829-0 (VA)  
 NVLAP Lab Code 500097-0 (AZ)

AZ, CO, GA, VA, NJ

Aerobiology Client		Aria Environmental, Inc.	
Field Contact	Julie Barth	Collected By/Date:	08/28/15 MT/JB
Reporting Address	PO Box 286 Woodbine, MD 21797	Relinquished By/Date:	
Billing Address	Same	Received By/Date:	PS 8/31/15 @ 10:00 AM
Phone/Fax	410-549-5774/410-549-4488	Sampler Type	Andersen _____ SAS _____
Reporting Email (s)	jbarth@ariaenviro.com	Sample/Aire	_____
Routine <input type="radio"/>	24 Hour <input checked="" type="radio"/>	AeroTrap	_____
	Same Day <input type="radio"/>	BioCulture	_____
	4 Hour <input type="radio"/>	PO#/Job#:	J15-876 GMS
	2 Hour <input type="radio"/>	Project Name:	Glenwood MS
	5 Day (Asbestos Only) <input type="radio"/>	Notes:	
SAMPLING LOCATION ZIP CODE		21738	CC Info:

Sample No.	Test Code	Sample Location	Total Volume/Area
01	1054/1026	Sterilite Bin	N/A
02	1054/1026	Kite yellow tail	N/A
03	1054/1026	Kite top black edge	N/A
	am 31 Aug 2015		

1054	Direct, Non-viable Spore Trap	1015	Culture - WATER Legionella
1051	Direct, Qualitative- Swab/Tape	1017	Culture - SWAB Legionella
1050	Direct, Qualitative- Bulk	1010	WATER - Potable - E. coli/total coliforms
1005	AIR Culture - Bacterial Count w/ ID's	1012	SWAB - E. coli/total coliforms
1030	AIR Culture - Fungal Count w/ ID's	1028	Sewage Screen (E. coli/Enterococcus/fecal coliforms)
1006	SWAB Culture - Bacterial Count w/ ID's	2056	Heterotrophic Plate Count
1031	SWAB Culture - Fungal Count w/ ID's	3001	ASBESTOS - Point count
1008	BULK Culture - Bacterial Count w/ ID's	3002	ASBESTOS - PLM Analysis
1033	BULK Culture - Fungal Count w/ ID's	3003	ASBESTOS - Particle characterization
1007	WATER Culture - Bacterial Count w/ID's	3004	ASBESTOS - PCM Analysis

# Kite and Bin from Classroom 13 at Glenwood Middle School



Plastic Storage Bin with light soiling



Plastic storage bin with dark background



Top view of kite top



Light dust on underside of kite top



# Kite and Bin from Classroom 13 at Glenwood Middle School



View of kite top left side



View of kite top right side



View of kite tail top section



View of kite tail mid-section

# Kite and Bin from Classroom 13 at Glenwood Middle School



View of kite tail bottom section



View of underside of kite tail



Tapelift sampling



Tapelift samples prior to shipment