

September 9, 2024

Will Wenzloff
Hillsboro School District
4901 SE Witch Hazel Road
Hillsboro, Oregon 97123

Via email: wenzloffw@hsd.k12.or.us

Regarding: Indoor Air Quality Report
Lenox Elementary School Music Room
21200 NW Rock Creek Boulevard
Portland, Oregon
PBS Project No. 23440.193 / 0006

Dear Mr. Wenzloff:

On September 4, 2024, PBS Engineering and Environmental LLC (PBS) collected non-viable fungal air samples at Lenox Elementary School in Portland, Oregon. The testing was conducted in response to staff concerns of a possible fungal amplification condition in the music room at the school. PBS collected air samples from the music room and cafeteria. Two additional air samples were collected from outdoors as baseline comparison samples.

The PBS sampling technician noted a sour mildew-like odor in the music room that seemed stronger near the entry. No visual evidence of fungal growth, and no staining to indicate current or past water intrusion events, was observed. The room was free of plants, pets, and accumulated food waste.

The air samples were collected using Allergenco-D impactor cassettes and a high-volume vacuum pump. Each sample was collected at a flow rate of 15 liters per minute for five minutes from an elevation of approximately four feet above floor level. The samples were submitted to Eurofins Built Environment Testing in Portland, Oregon, for nonviable fungal identification.

The airborne fungal concentration and predominant spore types from each sample are shown in the following table.

Table 1. Air Sample Laboratory Results

Sample	Location	Fungal Spore Concentration*	Predominant Spore Types
001	Music Room	170	<i>Penicillium/aspergillus types</i>
002	Cafeteria	910	<i>Penicillium/aspergillus types; ascospores</i>

003	Outdoors – East Side	11,000	<i>Ascospores; penicillium/aspergillus types; basidiospores; cladosporium</i>
004	Outdoors – East Side	8,200	<i>Ascospores; penicillium/aspergillus types; basidiospores; cladosporium</i>

**Spore concentrations are reported in total spores per cubic meter.*

Airborne fungal spore concentrations fluctuate seasonally and with changing weather conditions. In reviewing airborne fungal spore sample data, the two main considerations are the total spore concentrations and the relative proportions of the various spore types. Typically, fungal spore concentrations indoors are expected to be much lower than fungal spore concentrations outdoors. And, in the absence of an indoor fungal amplification condition, the relative proportions of spore types found indoors will generally be similar to the proportions of spore types found outdoors. High spore concentrations indoors, especially of spore types that are not well represented in the outdoor samples, indicate a possible fungal amplification condition.

Based on a review of the laboratory analytical data, the types and relative proportions of the fungal spores identified in the indoor samples were similar to the types and relative proportions of the fungal spores identified in the outdoor samples. Additionally, the overall concentration of fungal spores in the outdoor samples was significantly greater than the concentration observed in the indoor samples. These two observations are a strong indication that the fungal spores identified in the indoor samples originated from outdoor sources and that there is not an unusual or elevated fungal condition in the indoor test areas.

Laboratory analytical reports are attached.

LIMITATIONS OF SCOPE

This study was limited to the tests and locations as indicated above. The site as a whole may have other environmental concerns that will not be characterized by this study. The findings and conclusions of this work are not scientific certainties, but probabilities based on professional judgment concerning the significance of the data gathered during the course of this investigation. PBS is not able to represent conditions on the site or adjoining sites beyond those detected or observed by PBS.

Please feel free to contact me at 503.515.4726 or dale.voeller@pbsusa.com with any questions or comments.

Sincerely,

Dale Voeller
Digitally signed
by Dale Voeller
Date: 2024.09.09
18:21:37 -07'00'
Dale Voeller, CHMM, CSP
Senior Project Manager

Attachment: Laboratory Analytical Reports

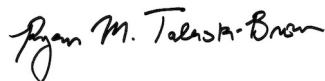
Report for:

Dale Voeller
PBS Engineering and Environmental: Portland
4412 S Corbett Ave.
Portland, OR 97239

Regarding: Eurofins EPK Built Environment Testing, LLC
Project: 23440.193 Phase 0006; IAQ
EML ID: 3769435

Approved by:

Dates of Analysis:
Spore trap analysis: 09-05-2024



Technical Manager
Ryan Talaski-Brown

Service SOPs: Spore trap analysis (EB-MY-S-1038)

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the samples as received and tested. Information supplied by the client which can affect the validity of results: sample air volume.

Eurofins EPK Built Environment Testing, LLC ("the Company"), a member of the Eurofins Built Environment Testing group of companies, shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Client: PBS Engineering and Environmental: Portland
C/O: Dale Voeller
Re: 23440.193 Phase 0006; IAQ

Date of Sampling: 09-04-2024
Date of Receipt: 09-04-2024
Date of Report: 09-06-2024

SPORE TRAP REPORT: NON-VIABLE METHODOLOGY

Location:	001-5826253: Music room			002-5824452: Cafeteria		
Comments (see below)	None			None		
Lab ID-Version‡:	18574687-1			18574688-1		
Analysis Date:	09/05/2024			09/05/2024		
	raw ct.	% read	spores/m3	raw ct.	% read	spores/m3
Ascospores				7	25	370
Basidiospores	1	25	53	1	25	53
Botrytis						
Chaetomium						
Cladosporium				1	25	53
Epicoccum						
Fusarium						
Myrothecium						
Nigrospora						
Other brown						
Other colorless						
Penicillium/Aspergillus types†	2	25	110	8	25	430
Pestalotiopsis						
Pithomyces						
Rusts						
Smuts, Periconia, Myxomycetes	1	100	13			
Stachybotrys						
Stemphylium						
Torula						
Ulocladium						
Zygomycetes						
Background debris (1-4+)	1+			1+		
Hyphal fragments/m3	13			< 13		
Pollen/m3	< 13			< 13		
Skin cells (1-4+)	2+			1+		
Sample volume (liters)	75			75		
§ TOTAL SPORES/m3			170			910

Comments:

Spore types listed without a count or data entry were not detected during the course of the analysis for the respective sample, indicating a raw count of <1 spore.

† The spores of *Aspergillus* and *Penicillium* (and others such as *Acremonium*, *Paecilomyces*) are small and round with very few distinguishing characteristics. They cannot be differentiated by non-viable sampling methods. Also, some species with very small spores are easily missed, and may be undercounted.

†† Background debris indicates the amount of non-biological particulate matter present on the trace (dust in the air) and the resulting visibility for the analyst. It is rated from 1+ (low) to 4+ (high). Counts from areas with 4+ background debris should be regarded as minimal counts and may be higher than reported. It is important to account for samples volumes when evaluating dust levels.

The analytical sensitivity is the spores/m³ divided by the raw count, expressed in spores/m³, per spore and per sample.

For more information regarding analytical sensitivity, please contact QA by calling the laboratory.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

§ Total Spores/m³ has been rounded to two significant figures to reflect analytical precision.

Client: PBS Engineering and Environmental: Portland
C/O: Dale Voeller
Re: 23440.193 Phase 0006; IAQ

Date of Sampling: 09-04-2024
Date of Receipt: 09-04-2024
Date of Report: 09-06-2024

SPORE TRAP REPORT: NON-VIABLE METHODOLOGY

Location:	003-5948395: Outdoors			004-5947484: Outdoors		
Comments (see below)	None			None		
Lab ID-Version‡:	18574689-1			18574690-1		
Analysis Date:	09/05/2024			09/05/2024		
	raw ct.	% read	spores/m3	raw ct.	% read	spores/m3
Ascospores	87	25	4,600	54	25	2,900
Basidiospores	30	25	1,600	18	25	960
Botrytis	1	100	13			
Chaetomium						
Cladosporium	28	25	1,500	19	25	1,000
Epicoccum						
Fusarium						
Myrothecium						
Nigrospora						
Other brown	1	100	13			
Other colorless						
Penicillium/Aspergillus types†	69	25	3,700	63	25	3,400
Pestalotiopsis				1	100	13
Pithomyces						
Rusts						
Smuts, Periconia, Myxomycetes						
Stachybotrys						
Stemphylium						
Torula				1	100	13
Ulocladium						
Zygomycetes						
Background debris (1-4+)	2+			2+		
Hyphal fragments/m3	27			< 13		
Pollen/m3	< 13			< 13		
Skin cells (1-4+)	< 1+			< 1+		
Sample volume (liters)	75			75		
§ TOTAL SPORES/m3			11,000			8,200

Comments:

Spore types listed without a count or data entry were not detected during the course of the analysis for the respective sample, indicating a raw count of <1 spore.

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Marlton, NJ: 3000 Lincoln Dr E, Ste. A, Marlton, NJ 08053 * (866) 871-1984
Phoenix, AZ: 1501 West Knudsen Drive, Phoenix, AZ 85027 * (800) 651-4802
Burlingame, CA: 111 Anza Blvd., Ste. 122, Burlingame, CA 94010 * (800) 651-4802

WEATHER		Fog	Rain	Snow	Wind	Clear
LEVEL	None					
	Light					
	Moderate					
	Heavy					

REQUESTED SECTIONS



003769435

CONTACT INFORMATION

CONTACT INFORMATION	
Company:	PBS ENGINEERING
Contact:	DALE VOELLER
Phone:	1-503-515-4726
Address: 4412 SCORBETT AVE, PORTLAND OR	
Special Instructions: VOELLER@PBSUSA.COM	

PROJECT INFORMATION

PROJECT INFORMATION					
Project ID:	23440.193 / 0006				
Project Description:	1AQ				
Project Zip Code:	97229				
PO Number:	<table border="1"> <tr> <td>Sampling Date/Time:</td> <td>9/4/2024</td> </tr> <tr> <td>Sampled By:</td> <td>Eleanor Dick</td> </tr> </table>	Sampling Date/Time:	9/4/2024	Sampled By:	Eleanor Dick
Sampling Date/Time:	9/4/2024				
Sampled By:	Eleanor Dick				

TURN AROUND TIME CODES - (TAT)

STD - Standard (Default)	Rushes received after 2pm or on weekends, will be considered received the next business day. Please alert us in advance of weekend analysis needs.
ND - Next Business Day	
SD - Same Business Day	
WH - Weekend/Holiday/ASAP	

[illegible]

SAMPLE TYPE CODES

SAMPLE TYPE CODES			
BC - BioCassette™	CP - Contact Plate	T - Tape	O - Other:
A1S - Andersen	ST - Spore Trap	SW - Swab	
SAS - Surface Air Sampler	B - Bulk	SO - Soil	
NP - Non-potable Water	P - Potable Water	D - Dust	

RELINQUISHED BY

Chambers

DATE & TIME

9/4/2024
12:00

RECEIVED BY

Nephrine River

DATE & TIME

9/4/2024

By submitting this Chain of Custody, you agree to be bound by the terms and conditions set forth at <http://www.emlab.com/terms-of-service>
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