



January 25, 2017

Attn: Herb Wagner
Safety Hazmat Coordinator
Portland Public Schools
EHS Coordinator
501 North Dixon Street
Portland, Oregon 97227

Re: Faubion at Tubman School
Portland Public Schools
Indoor Air Quality Report
PBS Project No. 6500.731 Phase 0001

Dear Mr. Wagner:

PBS Engineering and Environmental Inc. (PBS) recently performed indoor air quality testing in the Main Office and the Nurse's Office (Room 105) of the Faubion at Tubman School located at 2231 North Flint in Portland, Oregon.

As part of the indoor air quality testing services, PBS conducted an HVAC review, performed a visual assessment of the interior conditions in the test areas, collected airborne particulate samples and surface dust samples, and checked moisture levels in walls. It is PBS' understanding that the ceiling of Room 105 was damaged after a leaking roof event. As a result of the leak, floor covering materials in the Main Office and in the Nurse's Office were damaged.

VISUAL ASSESSMENT

The building is a multi-story, brick clad, masonry building. The areas tested included the offices within and surrounding the main reception-office area.

PBS observed excess moisture in the walls of the Room 105 and missing ceiling tiles. All tested materials in the front Nurse's Office and the main Reception Office were dry. PBS noted wet building material odors in Room 105. Carpet squares in the Reception Office area that had been impacted by the roof leak had been removed and discarded.

The walls are painted plaster and the ceilings are clad in a 12-inch square ceiling tile. Ventilation of the spaces is provided by a central HVAC system that delivers conditioned air via ceiling diffusers.

AIRBORNE PARTICULATE SAMPLING

PBS collected a total of three airborne particulate samples using Allergenco-D impactor cassettes and a high-volume vacuum pump. Two samples were collected from indoor locations and one was collected from outdoors. The outdoor sample was collected to establish background conditions.

Each sample was collected at a flow rate of 15 liters per minute for five minutes (75 liters) from an elevation of approximately 4 feet above ground level. The samples were submitted to Lab/Cor Inc. in Seattle, Washington, for fungal and non-fungal particulate identification under chain of custody. The weather conditions during PBS' site investigation were clear skies with light breezes; the outdoor temperature was approximately 45°F.

Table 1 summarizes the findings of this phase of the investigation.

4412 SW Corbett Avenue, Portland, OR 97239
503.248.1939 Main
866.727.0140 Fax
888.248.1939 Toll-Free
www.pbsenv.com

Table 1. Air Sample Laboratory Results—Fungal

Sample	Location	Fungal Spore Concentration*	Predominant Fungal Type
S1	Outdoors	5,133	Basidiospores
S2	Office 105	1,067	Basidiospores
S3	Reception	1334	Basidiospores

*Spore concentration is presented in spores per cubic meter.

In reviewing airborne fungal (mold) spore data, two main considerations are identified for each sample: the total number of spores, and the relative proportions of the various spore types. These two considerations are then compared for samples collected in a study area and samples collected outdoors. Based upon review of the laboratory data, indoor fungal spore concentrations were significantly lower than the average outdoor fungal concentration. When reviewing the spore types and individual spore type concentrations for the indoor samples, all are nearly identical to the spore types and relative spore type concentrations observed in the outdoor sample.

As a precaution, PBS collected a tape-lift surface dust sample from the top of a book case located along the south wall of the Reception Area. This sample was submitted to Lab/Cor Inc. in Seattle, Washington, for fungal and non-fungal particulate identification under chain of custody. Based upon review of the laboratory report for this sample, there were no elevated levels of spores. The spore types identified in the surface dust sample were nearly identical to the types of spores identified in the outdoor and indoor air samples. It should be noted that there were no Stachbotrys spores identified in either the air sample or the dust sample collected from the east classroom.

For more detailed information regarding the laboratory results of these analyses, please refer to the attached laboratory reports.

FINDINGS & RECOMMENTATIONS

PBS observed no indication of a significant indoor air quality concern in either the Reception Area or the Nurse's Office in the Faubion at Tubman School. There are currently wet wall conditions in Room 105. These wet building materials should be dried as quickly as possible and all sources of water intrusion should be identified and corrected.

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 conditions detected or observed by PBS.

PBS respectfully submits these results of our indoor air quality investigation. If you have additional concerns, please do not hesitate to contact me directly at 503.417.7597.

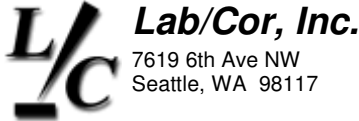
Sincerely,
PBS Engineering and Environmental Inc.



Douglas Hancock, CIH, CSP
Senior Project Manager

Attached: Lab Reports





Lab/Cor, Inc.
7619 6th Ave NW
Seattle, WA 98117

Analysis Report Cover
Final Report

Phone: (206) 781-0155
http://www.labcor.net

A Professional Service Corporation in the Northwest

Job Number: 161041 SEA
Client: PBS Engineering + Environmental
Address: 4412 SW Corbett Ave
Portland, OR 97239
Project Name: Tubman
Project No.: 6500.731
PO Number:
Sub Project:
Reference No.:

Report Number: 161041R01
Report Date: 12/7/2016

Enclosed please find results for samples submitted to our laboratory. A list of samples and analyses follows:

Lab/Cor Sample #	Client Sample # and Description	Analysis	Analysis Notes	Date Received:
161041 - S1	1652275 - OA	NV, Air, Fungal ID		12/5/2016
161041 - S2	1652244 - Office 105	NV, Air, Fungal ID		12/5/2016
161041 - S3	1652273 - Reception	NV, Air, Fungal ID		12/5/2016


Nonviable Air Air samples follow preparation and analysis techniques outlined in Method 5 of the laboratory SOP; this method is based on guidelines from the Pan-American Aerobiology Association Standardized Protocol and ASTM Method 7391-09. Samples were collected using either an Air-O-Cell, Cyclex-D, Allergenco-D, or M2 Multi-Mold nonviable air sampling cassette. Characteristic morphologies were observed by optical microscopy at a magnification of 600x. For each individual particle type observed, data was reported in particles per cubic meter of air (m3).

Due to various factors that influence uncertainty (media type, particle loading, staining, instrumentation and other variable aspects of the method), only the first two figures reported are considered to be significant. The area analyzed on each sample is 20%.

Disclaimer The results reported relate only to the samples tested or analyzed; the laboratory is not responsible for data collected by personnel who are not affiliated with the laboratory. Results reported in both structures/cm3 and structures/mm2 are dependent on the sample volume and area. These parameters are measured and recorded by non-laboratory personnel and are not covered by the laboratory's accreditation. Interpretation of these results is the sole responsibility of the client.

If further clarification of these results is needed, please call us. Thank you for allowing the staff at Lab/Cor, Inc. the opportunity to provide you with the analytical services.

Sincerely,


X

Ashley Tonge
Technician/Analyst

Nonviable Air

Job Number: 161041

Client: PBS Engineering + Environmental

Project Name: Tubman

Project No.: 6500.731

Reference No.:

Report Number: 161041R01

Date Received: 12/5/2016

Lab/Cor ID:	S1	S2
Sample No.:	1652275	1652244
Description:	OA	Office 105
Sample Measure:	75 L	75 L
Media Type:	Fungal-AllergencoD	Fungal-AllergencoD
Analyst - Analysis Date:	AT - 12/7/2016	AT - 12/7/2016
MRL:	67	67
Scope - Magnification:	Olympus BHT-BH2 - 600	Olympus BHT-BH2 - 600
Notes:		

Fungal Identification	Raw Count*	Total Count**	Total/m ³	Raw Count*	Total Count**	Total/m ³
Ascospores	11	55	733	1	5	67
Aspergillus/ Penicillium-like	7	35	467	5	25	333
Basidiospores	53	265	3533	9	45	600
Cladosporium	4	20	267			
Hyphal Fragments	2	10	133	1	5	67
Stemphylium						
Summary Total:	77	385	5133	16	80	1067

Lab/Cor ID:	S3	
Sample No.:	1652273	
Description:	Reception	
Sample Measure:	75 L	
Media Type:	Fungal-AllergencoD	
Analyst - Analysis Date:	AT - 12/7/2016	
MRL:	67	
Scope - Magnification:	Olympus BHT-BH2 - 600	
Notes:		

Fungal Identification	Raw Count*	Total Count**	Total/m ³	Raw Count*	Total Count**	Total/m ³
Ascospores	6	30	400			
Aspergillus/ Penicillium-like	3	15	200			
Basidiospores	9	45	600			
Cladosporium						
Hyphal Fragments	1	5	67			
Stemphylium	1	5	67			
Summary Total:	20	100	1334			

* - Raw Counts per 20% of Sample

** - Total Count per Sample

Nonviable Air

Job Number: 161041

Client: PBS Engineering + Environmental

Project Name: Tubman

Project No.: 6500.731

Reference No.:

Report Number: 161041R01

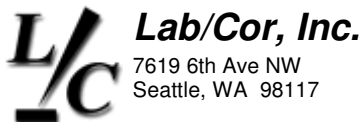
Date Received: 12/5/2016

Reviewed by:

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Ashley Tonge
Technician/Analyst



7619 6th Ave NW
Seattle, WA 98117

Analysis Report Cover
Final Report

Phone: (206) 781-0155
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A Professional Service Corporation in the Northwest

Job Number: 161041 **SEA**
Client: PBS Engineering + Environmental
Address: 4412 SW Corbett Ave
Portland, OR 97239
Project Name: Tubman
Project No.: 6500.731
PO Number:
Sub Project:
Reference No.:

Report Number: 161041R02
Report Date: 12/7/2016

Enclosed please find results for samples submitted to our laboratory. A list of samples and analyses follows:

Lab/Cor Sample #	Client Sample # and Description	Analysis	Analysis Notes	Date Received:
161041 - S4	TL-1 - Top of Book Shelf	NV, Surface, Fungal ID Qual.		12/5/2016

Nonviable Surface Surface samples (Swab or Tape) follow preparation and analysis techniques outlined in Method 7 and Method 9 of the laboratory SOP; these methods are based on guidelines from the Pan-American Aerobiology Association Standardized Protocol and ASTM Method 7391-09. Swab samples were suspended in a Peptone/ Tween buffered solution and stained using lacto-cotton blue. A 0.05 ml sub-sample of the buffered solution was then examined. Tape samples were mounted on a slide and stained using lacto-cotton blue.

Qualitative Analysis:

Characteristic morphologies were observed using optical microscopy at a magnification of 600x. Fungal and Particulates counts were reported in Relative Abundance (High, Moderate, Low, and Trace). The Minimum Reporting Limit (MRL) is 1 Fungal/ Particulate count (Trace Relative Abundance).


Quantitative Analysis:

Characteristic morphologies were observed using optical microscopy at a magnification of 600x. Fungal and Particulates counts were reported as the Total Concentration for each Fungal and Particulate type. The Minimum Reporting Limit (MRL) is 4 Fungal/ Particulate Counts/ cm² for Swab Samples and 6 Fungal/ Particulate Counts/ cm² for Tape Samples.

Disclaimer The results reported relate only to the samples tested or analyzed; the laboratory is not responsible for data collected by personnel who are not affiliated with the laboratory. Results reported in both structures/cm³ and structures/mm² are dependent on the sample volume and area. These parameters are measured and recorded by non-laboratory personnel and are not covered by the laboratory's accreditation. Interpretation of these results is the sole responsibility of the client.

If further clarification of these results is needed, please call us. Thank you for allowing the staff at Lab/Cor, Inc. the opportunity to provide you with the analytical services.

Sincerely,


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X

Ashley Tonge
Technician/Analyst

Nonviable Surface

Job Number: 161041
Client: PBS Engineering + Environmental
Project Name: Tubman
Project No.: 6500.731
Reference No.:

Report Number: 161041R02
Date Received: 12/5/2016

Lab/Cor ID:	S4	
Sample No.:	TL-1	
Description:	Top of Book Shelf	
Sample Measure:	1 each	
Media Type:	Fungal-BioTape	
Analyst:	AT	
Analysis Date:	12/7/2016	
Notes:		

Fungal Identification	Relative Abundance	Relative Abundance
Alternaria	Trace	
Ascospores	Trace	
Aspergillus/ Penicillium-like	Low	
Aureobasidium	Moderate	
Basidiospores	Moderate	
Bipolaris sp.	Trace	
Cladosporium	Trace	
Epicoccum	Trace	
Ganoderma	Trace	
Hyphal Fragments	Trace	
Oidium/ Peronospora	Trace	
Pithomyces	Trace	
Torula	Trace	

Reviewed by:

Digital Signature for Lab Use Only

 X

Ashley Tonge
 Technician/Analyst

Trace = <10 counts in examined area
Low = <30% coverage of examined area
Moderate = 30% - 70% coverage of examined area
High = >70% coverage of examined area