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November 13, 2019

STENC19003

Strategic Environmental Consulting, Inc.
Attn: Mr. Jim Bonanno
25 Butternut Lane
Bayville, New Jersey 08721

RE: MOLD ASSESSMENT
PEMBERTON HIGH SCHOOL – ROOMS 158 AND 274
148 ARNEY MOUNT ROAD
PEMBERTON, NEW JERSEY 08068

Dear Mr. Bonanno:

Pennoni is providing this report to **Strategic Environmental Consulting, Inc.** documenting the results of the mold assessment we conducted at the above referenced location. This report summarizes our findings relative to the conditions encountered during our site investigation, which consisted of a visual inspection of Rooms 158 and 274, recording of occupant comfort parameters, moisture measurements, and the collection and analysis of air samples for mold identification and enumeration.

Pennoni conducted the investigation following acceptable OSHA and USEPA standards and methodologies and the American Industrial Hygiene Association (AIHA) publication *The IAQ Investigator's Guide*, dated 2016.

BACKGROUND

Pennoni was contracted to conduct a mold assessment of Rooms 158 and 274 based on occupant concerns of potential mold growth. In Room 158 Choir Room, during the summer of 2019, the air conditioning was turned off for a few days and carpeting resultingly became mold impacted. Custodial staff steam cleaned the carpet three times and used an antimicrobial (Microban). The teacher has expressed concerns that the room may still be mold impacted.

In Room 274, the air conditioning was left running all summer causing coil to freeze. The room flooded throughout. The custodial staff steam cleaned the carpet four times and used an antimicrobial (Microban). The Assistant Principal has expressed concerns that the room may be mold impacted.

The purpose of this mold assessment is to determine if conditions within each room are being impacted by mold or other anomalies and to identify whether remedial actions or further investigations are warranted.

VISUAL INSPECTION

A visual inspection was conducted in Rooms 158 and 274 on November 7, 2019 by Ms. Nancy Wilson, one of Pennoni's Certified Industrial Hygienists. The following observations were made (see Appendix A – Site Photographs):

Room 158

- No discernable odors were noted.
- Accessible finishes include cinderblock walls, concrete floor covered with carpeting, and ceiling tiles. Carpeting is glued down to the concrete floor with no padding.
- Room 158 has a central heating, ventilation and air conditioning (HVAC) split system. The unit is located on the rooftop and is not shared with other rooms.
- No visible mold growth was observed on carpeting or walls.
- Seven ceiling tiles were observed with water stains of which one was observed with mold growth.
- The two HVAC returns and the vent to the hallway were covered with dust.
- The cinderblock walls are constructed with porous sound foam. The sound foam is behind the cinderblock walls. There are openings, 6 inches by ¾ inches, for the sound absorption. In areas inspected, the foam is deteriorated. The sound walls and room were constructed in 1991.
- Moisture readings indicated low (dry) moisture content on accessible building finishes via moisture meter.

Room 274

- No discernable odors were noted.
- Accessible finishes include cinderblock walls, concrete floor covered with carpeting, and ceiling tiles. Carpeting is glued down to the concrete floor with no padding.
- Heating and air conditioning is provided via a wall unit for Room 274.
- No visible mold growth was observed on accessible building finishes.
- Water staining is observed on carpeting throughout the room.
- Moisture readings indicated low (dry) moisture content on accessible building finishes via moisture meter.

COMFORT PARAMETER MEASUREMENTS

Using a handheld Extech 80 indoor air quality monitor, Pennoni measured temperature (°F), relative humidity (%RH), and carbon dioxide (CO_2) in each room and at the exterior for comparison. Measured temperature, relative humidity and carbon dioxide were within acceptable comfort or exposure ranges recommended by industry groups and government agencies.

Table 1. Comfort Parameter Measurements – November 7, 2019
Pemberton High School – Rooms 158 & 274
Pemberton, New Jersey

Location	Measured Temp. (°F)	Acceptable Spring/Summer Temp. (°F)	Measured Relative Humidity (%)	Acceptable Relative Humidity (%)	Measured CO_2 (ppm)	Acceptable CO_2* (ppm)
Exterior	60.0	73-79	51.1	30 - 60	346	-
Room 158	67.6	73-79	39.0	30 - 60	463	1,046
Room 274	71.6	73-79	31.1	30 - 60	448	1,046

**Indoor criterion is average outdoor ppm + 700 ppm*

AIR SAMPLING – NON-CULTURABLE FUNGI

Pennoni performed airborne non-culturable microbiological sampling utilizing Air-O-Cell® cassettes. At each sample location, a known volume of air was drawn over a laboratory prepared slide. Two interior air samples were collected and submitted to a microbiological laboratory. One outside air sample was also collected as a baseline reference for comparison to the indoor air samples.

The sampling cassettes were transported to Prestige EnviroMicrobiology, Inc. of Voorhees, New Jersey where they were analyzed for fungal enumeration and identification. The analysis results are summarized in the following table and the full laboratory results are attached to this report. While there is no accepted standard for microbiological organisms, the results are best utilized to compare areas within a given building.

The interior non-culturable air sample results indicate mold spores that were lower and/or similar to those measured in the exterior non-culturable air sample result, indicating an unlikely interior source of mold growth.

Table 1. Non-Culturable Fungi Sampling Results – November 7, 2019
Pemberton High School – Rooms 158 & 274
Pemberton, New Jersey

Sample Location	Predominant Species, Spores/m3							
	Ascospores	Basidiospores	Cladosporium	Hyphal Fragments	Myxomycetes	Pen/Asp-like	Pithomyces	Total
Exterior Air	370	900	740	53	53	370	*	2,500
Room 158	*	53	*	*	53	260	*	370
Room 274	*	53	*	*	53	*	53	160

** None Detected*
Minimum Detection Limit: 13 spores/m3
Bold indicates elevated concentration

SUMMARY/CONCLUSIONS

Based on our visual observations, moisture measurements and review of analytical data, Pennoni concludes the following:

- Room 158 - No visible mold growth was observed on carpeting or walls. Several ceiling tiles were observed with water stains of which one was observed with mold growth. The two HVAC returns and the vent to the hallway were covered with dust. Moisture readings indicated low (dry) moisture content on accessible building finishes via moisture meter. As discussed below, Pennoni recommends addressing water stained ceiling tiles and dusty HVAC returns and vent to hallway.
- Room 274 - No visible mold growth was observed on accessible building finishes. Water staining is observed on carpeting throughout the room. Moisture readings indicated low (dry) moisture content on accessible building finishes via moisture meter. No further recommendations are warranted for Room 274.

- The interior non-culturable air sample results indicate mold spores that were lower and/or similar to those measured in the exterior non-culturable air sample result, indicating an unlikely interior source of mold growth.

It should be noted that the conditions observed during this investigation are considered to be a "snapshot" of that point in time. With indoor air quality, conditions can change over time in relation to the outdoor environment and other factors.

RECOMMENDATIONS

Based on the findings, Pennoni offers the following recommendations for Room 158:

1. Clean dirty HVAC returns and vent to hallway.
2. Replace water stained ceiling tiles.
3. Determine and correct the source of water staining (i.e., possible roof leak or condensate from AC unit).

If you have any questions concerning this report or require additional information, please feel free to contact us at 856-547-0505.

Sincerely,

PENNONI ASSOCIATES INC.

Nancy Wilson, CIH
Senior Industrial Hygienist

Brian Clark
Project Manager

Attachments:
Appendix A – Site Photographs
Appendix B – Air Sampling Results

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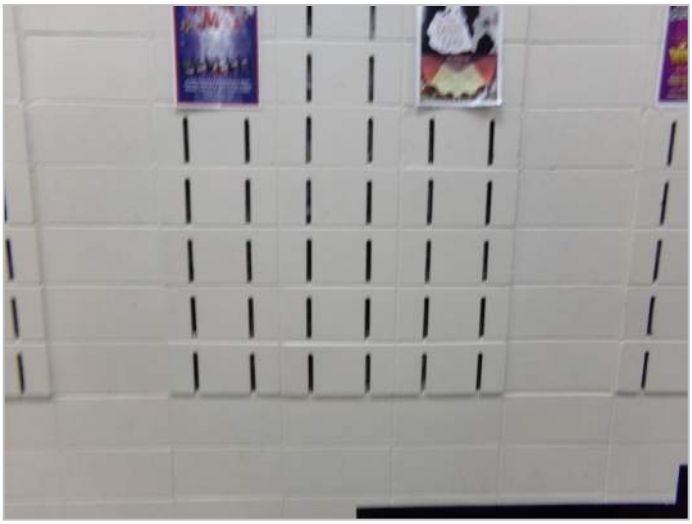
APPENDIX A

Site Photographs

Photographs 1 and 2.
Entrance to Room 158 Choir Room

Photograph 3.
Overview of Room 158



Photograph 4.
View of Openings in Sound Wall

Pennoni PENNONI ASSOCIATES INC. 515 GROVE STREET HADDON HEIGHTS, NEW JERSEY 08035		MOLD ASSESSMENT PEMBERTON HIGH SCHOOL – ROOMS 158 & 274 148 ARNEY MOUNT ROAD PEMBERTON, NEW JERSEY
Job No. STENC19003	Date Taken: November 7, 2019	SITE PHOTOGRAPHS

Photograph 5.
View of deteriorated sound foam behind concrete wall.

Photograph 6.
View of typical corroded return vent. Ceiling pictured is observed with mold growth.

Photograph 7.
View of typical water stained ceiling tile.

Photograph 8.
Entrance to Room 274

Pennoni PENNONI ASSOCIATES INC. 515 GROVE STREET HADDON HEIGHTS, NEW JERSEY 08035		MOLD ASSESSMENT PEMBERTON HIGH SCHOOL – ROOMS 158 & 274 148 ARNEY MOUNT ROAD PEMBERTON, NEW JERSEY
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Photograph 9.
Overview of Room 274

Photograph 10.
View of typical water staining on carpeting. Carpet was dry at the time of our assessment.

Photograph 11.
View of typical water staining on carpeting. Carpet was dry at the time of our assessment.

Photograph 12.
Moisture reading on wood door frame at entrance to basement. Moisture reading was low (dry).

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Job No. STENC19003	Date Taken: November 7, 2019	SITE PHOTOGRAPHS

APPENDIX B

Air Sampling Results

Prestige EnviroMicrobiology, Inc.

Analytical Test Report

Client: Pennoni, 515 Grove Street, Suite 1B, Haddon Heights, NJ 08035

Client Project/Name: STENC19003

Sample date: 11-7-2019

Submittal date: 11-7-2019

Samples submitted by: Nancy Wilson

Date analysis completed: November 7, 2019

Prestige Report number: 191107-08

Microscopic Method (P001): Analysis of Air-O-Cell Samples for Total Fungal Structures by Optical Microscopy

Prestige # Client sample ID Location	Air vol. (m^3)	% read	Presumptive fungal ID	Counts of fungal structures	Fungal structures/m^3	Percentage	Background rating
191107-08-089 1 Outside	0.075	25.3	ascospores basidiospores *Cladosporium* hyphal fragments myxomycetes Pen/Asp-like	7 17 14 1 1 7	370 900 740 53 53 370 Total 2,500	15% 36% 30% 2% 2% 15%	1
191107-08-090 2 Room 158	0.075	25.3	basidiospores myxomycetes Pen/Asp-like	1 1 5	53 53 260 Total 370	14% 14% 71%	1
191107-08-091 3 Room 274	0.075	25.3	basidiospores myxomycetes *Pithomyces*	1 1 1	53 53 53 Total 160	33% 33% 33%	1

Report approved: Theresa Lehman

Theresa Lehman, MPH, Lab Director

Technical Manager:

Chin S Yang, Ph.D.

Analyst: Theresa Lehman

1. The samples in this report were received in good, acceptable conditions. Prestige EnviroMicrobiology has not performed sample collection for the sample items listed in this report. Results relate only to the items tested.
2. Spore trap samples are first scanned at 200x and then analyzed at 600x magnification.

3. Concentrations and percentages are rounded. Total percentage may not add up to 100% due to rounding. Percentage is for each group in total population.
4. Background rating 1-5 (1 being the lowest and 5 the highest) indicates density of sample deposit. The higher the sample deposit is, the more likely some fungal structures are obscured. A "0" background indicates no trace was observed.
5. The detection limit of this analysis is one fungal colony, one bacterial colony or one fungal structure. The analytical sensitivities vary from analysis to analysis or by air volume. For calculation of your analytical sensitivities, please visit our webpage http://prestige-em.com/index-tech.htm or contact us by calling 856-767-8300 or by email info@Prestige-em.com.
6. For technical information on result interpretation, please visit www.Prestige-EM.com.

Prestige EnviroMicrobiology, Inc. Tel: 856-767-8300 Fax: 856-767-8305
242 Terrace Boulevard., Suite B-1, Voorhees, New Jersey 08043

Prestige Proj.#: 191107-08

Chain-of-Custody and Analysis Request Form

Client name: Pennoni Tel: 856-341-4744 Client proj.#: STENJC19003

Address: 515 Grove Street, Suite 1B Fax: tp.22949@pennoni.com P.O.#:
Haddon Heights, NJ 08035 nw.wilson@pennoni.com
E-mail: bclark@pennoni.com Date sampled: 11-7-19

Sample ID	Location or source	Sample type	Air vol (L)/ Area (inch^2)	Water: potable or non-potable	Analysis requests code or description	Turnaround time	Notes or special instructions
1	Outside	ST	75 L	—	P001	24 hr	—
2	Room 158	ST	75 L	—	P001	24 hr	—
3	Room 274	ST	75L	—	P001	24 hr	—

Contact name: Nancy Wilson Submitted by: (sign & print) Nancy Wilson Date submitted: 11-7-19

Received by: (sign & print) Jackie Yang Date & time received: 11/7/19 12:15 Delivered by: Fedex, UPS, USPO, in person

(For lab use only) Processed by: Sample type: Date: