## **Pembroke Public Schools**

Air Quality/Mold Overview



## **Overview**

- Different types of HVAC systems at our schools
- Timeline of concerns at Hobomock
- Reports
- Results
- Recommendations
- Remediation steps taken to date
- Next Steps

# 3 Different Types of HVAC Systems in our Schools

- Univent (Unit Vent) System North Pembroke, Bryantville, PCMS
  - Heating and ventilation system designed to provide both fresh outside air and temperature control
    to a single room or zone, commonly used in classrooms, where it's mounted on an exterior wall to
    bring in outside air and deliver tempered air to the space; essentially acting as a self-contained
    heating and ventilation unit for an individual room. In addition classroom windows can be opened
    to introduce additional ventilation and air.

#### Closed Air System - PHS

- Outside air is introduced through roof top units, then cooled or heated through a cool system. The system is considered closed because the classroom windows at PHS do not open, the temperature and airflow is completely controlled by the HVAC system
- Air Handler System Hobomock
  - Takes in outside air, conditioning it with heating or cooling, filtering it, and then distributing the
    conditioned air throughout the building through a network of ducts, ensuring comfortable
    temperatures and proper ventilation in classrooms and other spaces, while maintaining good
    indoor air quality by removing pollutants and managing humidity levels

# Hobomock's Air Handling System

- 6 Roof Top Units:
  - Air Handler Unit #1 (AHU-1) Kindergarten, Grades 1 & 2
  - AHU-2 Grades 4,5,6 Art Room & Science Lab
  - AHU-3 Gymnasium
  - o AHU 4 Cafeteria, Kitchen, Ensemble Room
  - AHU 7 Music Room, Teacher's Room, Atrium
  - Air Conditioning Unit 1 (ACU-1) Library & Main Office
- Each Unit is a double filter Set-up
  - MERV 8/10 Filter changed every 4 months
  - MERV -12/13 Filters changed annually or as needed
- Each classroom has on average 2 supply vents and 2 exhaust (return) vents.







Supply Vent

Return Vent

# TIMELINE - August 2003 - December 2020

#### **November 2016**

Limited Air Quality Testing Done by PMEC in response to a musty odor in areas of the building

#### **December 2020**

As part of the efforts to return students to classrooms during COVID a Building Health Assessment was conducted by Pure Air (done on all 5 buildings)

#### **August 2003**

<u>Press Release</u> regarding mold damage at Hobomock following a moisture concern in certain areas of the building

#### **November 2017**

The District partnered with the
Department of Public Health Indoor Air
Quality Testing to do a full assessment of
the building (done for all 5 buildings)

# **Experts - Roles/Certifications**

#### Lisa Cullity - Pembroke Licensed Health Agent

#### Inspections:

Performing routine inspections of food establishments, swimming pools, housing units, septic systems, and other public places to identify potential health risks and ensure compliance with regulations.

#### Complaint investigations:

Investigating complaints related to nuisance conditions, unsanitary living situations, or potential disease outbreaks.

#### Enforcement actions:

Issuing citations, orders to correct violations, and potentially pursuing legal action against individuals or businesses not complying with health regulations.

#### Disease surveillance:

Monitoring and reporting cases of communicable diseases to the appropriate health authorities

#### Public education:

Providing health information and educational materials to the community on important public health issues

#### **Emergency preparedness:**

Assisting in public health response during emergencies or outbreaks

#### Education

- A bachelor's degree in public health, health administration, social work, or a related field
- A graduate degree in public health
- A bachelor's degree with at least 30 semester hours in public health-related disciplines

#### Experience

- Three to five years of experience in public health or a related field
- Two years of progressively responsible work in public health
- Three or more years of professional experience in public health or social services

#### Other requirements

- A valid Massachusetts driver's license
- Registration as a Sanitarian by the Massachusetts Board of Registration of Sanitarians
- Certification from DEP as a licensed Soil Evaluator
- Membership in the MA Public Health Association or American Public Health Association
- Completion of a course on public health law
- Demonstrated Department of Environmental Protection coursework on state environmental code or public health topics

#### Paul Matuszko (PMEC) - District's Air Quality Expert

- Certified Industrial Hygienist (CIH), American Board of Industrial Hygiene
- Certified Indoor Environmental Consultant (CIEC), American Council for Accredited Certification
- Construction Documents Technologist, (CDT), Construction Specifications Institute
- Asbestos Inspector, Massachusetts Division of Labor Standards (DLS)
- Asbestos Management Planner, Massachusetts DLS
- Asbestos Project Designer, Massachusetts DLS
- Licensed Asbestos Project Monitor, Massachusetts DLS

#### **Scott Fulmer - MTA Health and Safety Expert**

 National Organization of Remediators and Microbial Inspectors NORMI

# November 2016 PMEC Testing (Full Report)

Areas Inspected/Tested: Rooms 130, 140, 150, 160 Kindergarten and Third Grade Hallways

#### **Observations:**

- No Visible suspect surface mold growth was identified on exposed surfaces within classrooms 130, 140, 150 and
- No evidence of current or previous water infiltration or chemical related storage issues within inspected areas.
- Ceiling vent grills throughout the wing were observed to have a build up of dust on and inside vent surfaces. Ceiling HVAC supply vents were observed to be generally clean and free from accumulated dust and debris.
- Room 130 had a noticeable musty/moldy like odor detected in the back of the room in the area above the ceiling supply diffuser. Inspection of the ceiling plenum space above detected no odor
- Room 140 No odors detected. Classroom had been recently disinfected and a chemical cleaning smell still existed.
- Rooms 150 & 160 No odors detected.
- Kindergarten Hallway No odors detected. Representative areas above the ceiling also contained no odors. Dried water spots were observed on steel beams and ceiling deck around un-insulated fire sprinkler piping. It is believed condensation develops in the summer months causing spotting.
- 3rd Grade Hallway: -No visible surface mold growth was identified on exposed surfaces. No odors detected. Similar water spotting from fire sprinkler piping observed on steel beams and ceiling deck.

# **Sampling Results**

		Table 1 Iicrobial Analysis Ro k Elementary Schoo	
Sample #	Sample Location	Total Fungi	Specific Species & levels
22633440 (01)	Classroom 140 at back left side desk	26 S/m <sup>3</sup>	Ascospores – 13 S/m <sup>3</sup> Basidiospores – 13 S/m <sup>3</sup>
22633411 (02)	Classroom 130 at back side desk	13 S/m <sup>3</sup>	Basidiospores - 13 S/m <sup>3</sup>
22633418 (03)	Classroom 150 at back side table	40 S/m <sup>3</sup>	Aspergillus/Penicillium – 13 S/m <sup>3</sup> Basidiospores - 13 S/m <sup>3</sup>
22633423 (04)	3 <sup>rd</sup> Grade Hallway	13 S/m³	Ascospores – 13 S/m <sup>3</sup>
22626885 (05) (Comparison sample)	Outside ambient air (at street)	453 S/m³	Alternaria – 13 S/m <sup>3</sup> Ascospores – 67 S/m <sup>3</sup> Basidiospores – 267 S/m <sup>3</sup> Bipolaris – 13 S/m <sup>3</sup> Cladosporium – 40 S/ m <sup>3</sup> Myxomycetes – 40 S/m <sup>3</sup> Epicoccum – 13 S/m <sup>3</sup>

		Table 2 Lift Analysis Result k Elementary School	
Sample #	Sample Location	Mold Spore Estimate	Mycelial Estimate (current active growth)
193-01T	3 <sup>rd</sup> Grade Hallway – Above ceiling tile on steel beam with suspect dried water spotting	No Fungi Detected	Nofungi/ mycelial detected

	General	100	able 3 meter Meas	urements		
Sample Location	Time Sampled	Temp (°F)	RH (%)	CO <sub>2</sub> (ppm)	CO (ppm)	Comments
Classroom 140 (middle of room)	11:29 am	70.7	45.9	648	0.0	Vacant room - HVAC on
Classroom 130 (at back desk)	11:34 am	72.5	45.1	546	0.0	HVAC on
Hallway at room 130	11:40 am	73.4	44.4	610	0.0	
Classroom 150 (at back table)	11:50 am	73.4	43.0	516	0.0	HVAC on
3 <sup>rd</sup> Grade Hallway	12:15 pm	73.4	43.9	541	0.0	
Outside ambient air (street level)	12:38 pm	68.9	52.9	400	0.0	Warm, sunny fal day

#### Discussion of Results:

1. Spore Trap Samples

Sample results indicate normal levels of typically found indoor mold spores in each sample. The airborne mold spore levels are considered low. The mold species identified are typically found in indoor environments at low levels

2. BioTape Lift Sample

Analysis result indicates no fungi (mold) spore or mycelium growth. The dried water stains/droplets present in hallway ceiling plenum do not contain mold growth

3. Indoor Air Quality Measurements

Carbon Dioxide - all locations sampled within recommended guidelines
Carbon Monoxide - none detected
Temperature and Relative Humidity - 70.7-73.4 degrees, 43.0-45.9% relative humidity - all within recommended levels

## Recommendations



Spore trap samples show low levels of airborne mold spores. No current visible mold or water damaged materials were observed



 No Additional mold sampling is recommended at this time



Results of baseline IAQ sampling indicate those measured are within recommended ASHRAE Guidelines. No Additional IAQ Sampling Recommended.



- If concerns persist, additional IAQ sampling and investigation may be conducted
- Full Building IAQ assessment done by the DPH in November of 2017



Supply and return vents (including interior metal surfaces) within kindergarten wing classrooms be cleaned of accumulated dust and debris



Work Completed by Hobomock

Maintenance Staff during

December/winter break.



Rooftop Air Handling Unit and associated ducting supplying Kindergarten classrooms and 3rd grade hallways should be assessed for inspection



 Inspection completed January 2017 by HVAC contractor Arnold Refrigeration

# November 2017 DPH Testing (Full Report)

#### Overview- 54 areas tested

- Carbon Dioxide below 800 parts per million in 47 of 54 areas tested, indicating adequate air exchanges, some areas were empty which can reduce carbon dioxide levels
- Temperature within the recommended range of 70-78 degrees Fahrenheit in about half the areas tested, just slightly below that range in the other half of the areas tested
- Relative humidity was within or slightly below the recommended range of 40-60% in all areas tested
- Carbon Monoxide non-detectable in all areas tested
- Fine Particulate matter concentrations were below the NAAQS limit of 35/m<sup>3</sup> in all areas tested

# **Conclusions/Recommendations**

1. Operate all supply and exhaust ventilation equipment continuously during occupied periods		All units set to 8-3:30 for School Days - AHU - 2 runs 24/7
2. Use openable windows to supplement fresh air. Ensure all windows are closed at the end of the day		Managed by classroom & maintenance staff
3. Check exhaust fans for draw periodically and repair any non-operating vents	~	Managed by maintenance staff in conjunction with HVAC vendor
4. Close classroom doors to facilitate exhaust function	<b>~</b>	
5. Adopt a balancing schedule every 5 years for all mechanical ventilation systems		We use WebControls through Automated Logics
6. During periods of low humidity, scrupulous cleaning practices should be adopted which include using HEPA vacuums to control dust, and wet wiping of all surfaces		Managed by maintenance staff
7. Ensure roof and plumbing leaks are repaired and replace water damaged ceiling tiles	ongoing	Managed by maintenance staff in conjunction with roofing and plumbing vendors
9. Ensure ductless AC condensate is draining properly and clean the units in LGI		Units were cleaned in Summer of 2018 and both units were replaced in the Summer of 2024
10. Keep logs of any chronic odors	Ongoing	Managed by building staff and administrator
11. Avoid placing refrigerators and water dispensers on carpet, use waterproof mat or tile	×	1 refrigerator in teachers room is still on carpet
12. Properly maintain plants		Plants were removed from classroom spaces
13. Reduce use of products and equipment that use VOCs	Ongoing	Only products approved for use in School Buildings are available
14. Replace tennis balls on chair footings with latex-free glides	Ongoing	
15. Continue changing filters for HVAC equipment 2-4 times per year, DPH recommends MERV-8	~	Filters are changed 3 times a year and we are using MERV -8 & 12
16. Regularly clean/vacuum supply vents and fans	×	This had not been happening but entire system was professionally cleaned in 2024 and upkeep will be part of summer cleaning
17. Clean window-mounted ACs including filters	Ongoing	We have been replacing AC units as needed
18. Consider reducing the amount items stored in classrooms to make cleaning easier	Ongoing	
19. Clean pencil sharpener debris regularly	<b>✓</b>	
20. Clean carpeting annually (or semi-annually) in soiled high traffic areas		Managed by maintenance staff as well as outside vendors

# December 2020 Pure Air Systems (Full Report)

- Overview:
- 8 rooms were sampled Room 100, 125, 145, 160, 210, 225, 240, 255
  - Surface Tape Preparations to assess the distribution of fungal structures and/or other allergens settled in the environment
  - Radon gas testing
  - Surface sampling of frequently touched areas for COVID-19 and SaRS-CoV-2
  - Measurements of temperature and relative humidity for the assessment of comfort and conditions that might support microbial proliferation and chemical interactions
  - Measurements of carbon dioxide as a measure for ventilation adequacy
  - Particle counting of respirable size as an indicator of air filtration efficiency and/or unusual dust levels.
  - Visual inspection of the air handler and air distribution system to address any potential sanitary conditions that may need attention

# Results

#### Air Quality

Matrix	Parameter	Unit	Guideline*	Ref.	Room 160	Room 145	Room 100	Room M125	Room 255	Room 240	Room 225	Room 210	Outside Ai
Comfort	Temperature	٥F	72 to 78	1	66.6	68.8	70.8	68.4	72.7	73.2	72.9	72.9	33.0
	Relative Humidity	%	30 to 60	1	24.5	20.7	18.7	17.9	21.1	19.8	21.0	19.6	34.4
Particle	Respirable size	p/I	≤25,000 or 1/3 OA	3	9,542	6,348	6,197	6,707	6,902	5,023	6,375	8,728	9,977

#### **Foot Notes**

Reference Notes cts/m\* = Counts per Cubic Meter of Air 1. ASHRAE Handbook Fundamentals 2017 p10.16 BDL = Below Detectable Limit «F = Degrees Fahrenheit 2. ASHRAE 62.1 - 2016 OA = Outside Air Red = Unacceptable, Remedial Action Highly Recommended % = Percent 3. Pure Air Control Services, Inc. Yellow = Marginal Condition. Remedial Actions Optional ppm= parts per million 4. Molhave 1990 5 2016 ASHRAE Handbook - HVAC p/l = particles per liter of air NA = Not Applicable Systems and Equipment, Chapter 22.1 " - See Guidelines Section

#### Settled Aerosols in the Occupiable Space

	200000000000000000000000000000000000000				Roor	n 160	Roor	n 145	Roor	n 100	Room	M125
Matrix	Parameter	Unit	Guideline*	Ref.	Teacher Desk	Student Desk	Teacher Desk	Student Desk	Teacher Desk	Student Desk	Teacher Desk	Student Desk
	Opaque Particles	cts/cm <sup>2</sup>	≤6000	3	1,970	2,700	578	248	973	950	1,660	3,930
	Skin Cell Fragments	cts/cm <sup>2</sup>	≤1200	3	850	288	20	12	769	156	532	328
	Insect Biodetritus	cts/cm <sup>2</sup>	≤32	3	16	BDL						
Tape Prep	Fibers	cts/cm <sup>2</sup>	≤240	3	488	572	16	4	468	24	292	56
Tape Prep	Fiberglass Fibers	cts/cm <sup>2</sup>	≤32	3	8	4	BDL	BDL	BDL	BDL	BDL	BDL
	Pollen	cts/cm <sup>2</sup>	≤32	3	12	44	BDL	BDL	4	BDL	BDL	BDL
	Fungal Elements	cts/cm <sup>2</sup>	≤100	3	96	8	BDL	BDL	28	BDL	32	4
	Other	cts/cm <sup>2</sup>	≤1300	3	1,490	1,900	256	64	623	236	644	729

#### **Foot Notes**

Units	Reference	Notes
cts/m² = Counts per Square Centimeter	3. Pure Air Control Services, Inc.	BDL = Below Detectable Limit
		NA = Not Applicable  Ned =   Maccoeplable, Remedial Actions Highly Recommended  Yeshow = Araphal Condition, Remedial  * = See Guidelines Section  **  **  **  **  **  **  **  **  **

#### Settled Aerosols in the Occupiable Space

Matrix	Parameter	EV-74	Guideline*	D. F.	Roor	n 240	Roor	n 225	Roon	n 210	Roor	n 255
Matrix	Parameter	r Unit C	Guideline	Ref.	Teacher Desk	Student Desk	Teacher Desk	Student Desk	Teacher Desk	Student Desk	Teacher Desk	Student Desk
	Opaque Particles	cts/cm <sup>2</sup>	≤6000	3	2,100	6,850	693	2,400	3,100	1,100	547	743
	Skin Cell Fragments	cts/cm <sup>2</sup>	≤1200	3	332	172	292	132	288	36	216	72
	Insect Biodetritus	cts/cm <sup>2</sup>	≤32	3	BDL	8						
Tape Prep	Fibers	cts/cm <sup>2</sup>	≤240	3	148	44	92	44	100	28	284	76
таре гтер	Fiberglass Fibers	cts/cm <sup>2</sup>	≤32	3	BDL	BDL	BDL	8	BDL	BDL	BDL	BDL
	Pollen	cts/cm <sup>2</sup>	≤32	3	BDL							
	Fungal Elements	cts/cm <sup>2</sup>	≤100	3	144	12	4	BDL	4	4	BDL	BDL
	Other	cts/cm <sup>2</sup>	≤1300	3	584	1,070	696	348	372	200	312	132

#### **Foot Notes**

Units	Reference	Notes
cts/m² = Counts per Square Centimeter	3. Pure Air Control Services, Inc.	BDL = Below Detectable Limit
		MA = Not Applicable Unexceptable, Remodal Actions Stage Value  ** a Sec Disdelines Section  ** a Sec Disdelines Section  ** a Sec Disdelines Section  ** The Committee of the Co

## **Conclusions/Recommendations**

- Fungal elements in Room 240 were detected to be slightly elevated
- Excessive dust was found in Room 100, 125, 160, 240 & 255 Elevated dust settlement levels often time result from elevated human activity and indicate the need for increased housekeeping and air filtration efficiency also.
- Respirable-size particles in all areas tested were well within recommended levels
- Carbon Dioxide concentrations are used as a rough way to assess the adequacy of the ventilation system- all reading were well with the recommended guideline
- Temperature and relative humidity readings were low in most areas, based on the outside temperature on the day of testing (34.5 degrees) these low readings did not indicate a concern.
- AHU-1, ACU-1 and AHU-7 were assessed and a significant layer of dust was observed
- No radon was detected in any of the areas tested

# Recommendations



- Clean and Sanitize the Air Handlers Completed by Arnold Refrigeration Spring of 2021
- Environmentally clean and sanitize the air distribution system Fully completed 2024
- Air Handler and Air Distribution cleaning needs to be completed by licensed HVAC vendor
- WORK PARTIALLY COMPLETED: IN 2020 FULLY COMPLETED 2024



- Recommended that rooms 100, 125, 160 & 255 be environmentally cleaned
- Cleaning and Sanitizing all surfaces
- Direct Contact Vacuuming
- Use of Registered Biocide
- WORK COMPLETED BY MAINTENANCE STAFF 2020-Ongoing



- Use filters of at least MERV-8
- Make sure filters fit snugly on racks, covers fit properly, air handlers are properly sealed
- Set thermostats to maintain temperature and relative humidity
- Ensure maintenance is using vacuums with HEPA filters
- WORK COMPLETED BY MAINTENANCE STAFF 2020-ONGOING

# **TIMELINE - August 2023- Present Day**

#### **August 2023**

Concern raised in Room 225

#### October 2023

Division of Labor Standards Complaint filed by PTA

#### September 2023

Additional areas of concern raised by staff - PMEC testing done on Room 225, Art Hallway, Hallway at Room 150, Room 245/250 and Atrium by Cafeteria

#### **November 2023**

All recommended remediation completed. Closeout report issued DLS Complaint closed

# August 2023-December 2023

#### August/Early September

- \* Concerns raised by staff regarding moisture in 4/5/6 wing
  - \* Consultation with BOH
  - \* Areas professionally cleaned
- \*Testing scheduled with PMEC

#### September

- \* 1st Round of Testing 9/19/23
- \* Initial Testing Warranted follow-up testing 9/25/23
- \* Remediation Plan developed by Environmental Consultant (PMEC)

#### October

- \* Portable HEPA Filters purchased to use in classrooms in off hours
- \* Entire supply duct work system in 4/5/6 hallway professionally cleaned
- \* Additional testing performed by the Pembroke Teacher's Association

#### November

- \* Follow up testing performed 11/13/23 (30 days following HVAC cleaning)
- \* No elevated results reported
- \* Closeout report issued by PMEC

# August 2023 Detail

- Concerns raised by staff
  - August 29th & 30th 4/5/6 wing
  - Consulted with BOH Agent
  - Rooms professionally cleaned and sanitized over Labor Day weekend
- Areas professionally cleaned
  - Stanley Steamer environmentally cleaned rooms 225,230,235,240,245,250,210,215 on 9/4/23
- Inspection by Board of Health Agent Lisa Cullity
  - 9/14/23 Lisa joined me to tour Hobo as well as to take a look at two concerns that had been raised by staff on 9/13/23 (please see photos slide)
- Testing Scheduled 9/19/23 with PMEC

# Communications SY 2023-2024

- **September 19, 2023** Attendance at Hobomock staff meeting to answer questions and identify additional areas for testing from PPS expert
- **September 28, 2023** Letter to Hobomock Families regarding concerns and remediation steps in the 4/5/6 wing
- March 11, 2024 Attendance at Hobomock PTO meeting to address parent questions and concerns.
- **March 15, 2024** Communication to Hobomock Families regarding the full remediation of the concern in 4/5/6 wing and opportunities for them to ask questions and raise concerns
- March 20, 2024 Set up a table in the library at Parent teacher conferences for families to ask questions (1 parent inquiry)
- March 21, 2024 Parent Q & A Meeting with myself and Health Agent Lisa Cullity. 4 parents attended, 1 staff member and one community member/real estate agent from Hanover.
- March 26, 2024 Attendance at Hobomock Staff meeting to answer any remaining questions
- Ongoing response to individual questions from both myself and administrators at Hobomock (Michael Murphy/Ashley Cross)

# September 2023 Detail

- First Round of Testing 9/19/23 Results
  - Elevated Levels of Aspergillus/Penicillium and Cladosporium in Room 225
  - 2. Classroom 225: The analysis results for classroom 225 indicates an overall elevated level of airborne fungal spores (3,600 C/m³). Additionally, the analysis indicates an elevated level of Aspergillus/Penicillium (Asp/Pen) and Cladosporium spores. Asp/Pen fungal growth is often associated with wet building materials and within areas of long term high humidity. The long term high humidity conditions in the summer season may allow microbial growth to occur on porous surfaces (paper, ceiling tiles, carpeting, wallboard, etc.) The presence of Cladosporium spores is often associated with condensation moisture from HVAC systems. The Aspergillus/Penicillium and Cladosporium species may be of concern for immunocompromised individuals.
- Follow Up testing of more areas in the 4/5/6 wing 9/25/23 Results

		Table 2 I Sample Analysis Res ember 25, 2023 (2 <sup>nd</sup> ro	
Sample #	Sample Location	Total Fungi (C/m³)	Specific Species & levels of note
3705 3109 (01)	Classroom 225 - at front desk (opposite entrance door)	750 C/m <sup>3</sup>	Aspergillus/Penicillium – 750 C/m²
3705 3116 (02)	Classroom 225 - at back desk (near door)	243 C/m <sup>3</sup>	Aspergillus/Penicillium – 230 C/m <sup>3</sup> Myxomycetes – 13 C/m <sup>3</sup>
3705 3119 (03)	Classroom 230 – at back desk	210 C/m <sup>3</sup>	Aspergillus/Penicillium – 210 C/m <sup>2</sup>
3705 3115 (04)	Classroom 235 – at back desk	53 C/m <sup>3</sup>	Ascospores – 40 C/m <sup>3</sup> Basidiospores – 13 C/m <sup>3</sup>
3705 3118 (05)	Classroom 245 – at back desk	26 C/m <sup>3</sup>	Basidiospores – 13 C/m <sup>3</sup> Cladosporium – 13 C/m <sup>3</sup>
3592 3577 (06)	Classroom 250 – at back desk	40 C/m <sup>3</sup>	Ascospores – 40 C/m <sup>3</sup>
3705 3102 (07)	Outside ambient air Outside exit door 3 (comparison sample)	2,057 C/m <sup>3</sup>	Ascospores – 1,500 C/m <sup>3</sup> Basidiospores – 530 C/m <sup>3</sup> Myxomycetes – 27 C/m <sup>3</sup>

Notes:	Additional informat	ion on species types are pr	ovided in the Laboratory Analysis results.	

	Tape Lift (Bio-Tape	Table 3 a) Surface Sampling Analysis Resu	lts
Sample #	Sample Location	Mold Spore Present / Estimate	Mycelial estimate (Growth potential)
01T	Classroom 225 – left side ceiling supply vent	Myxomycetes - rare Aspergillus/Penicillium – light	None (ND) None (ND)
02T	Classroom 225 – left side ceiling supply vent	Aspergillus/Penicillium – light Cladosporium – Light	None (ND)
03T	Classroom 225 – in ceiling plenum on back side metal ceiling joist (yellow staining)	No Fungi Present	None (ND)

# Fall 2023 Remediation

- AHU-2 and associated ductwork for classroom 225 and 230 should be cleaned and decontaminated. COMPLETED BY AIR DUCT SERVICES OCTOBER 2023
- HEPA filtration via scrubber fans is recommended in rooms 225, 230 and all adjacent areas. This process will assist in reducing airborne mold spore levels on a consistent basis over times. HEPA SCRUBBERS PURCHASED SEPTEMBER 2023
- 3. Horizontal room surfaces may be cleaned and disinfected on a regular basis to assist in removing any settled spores that may be present MAINTENANCE STAFF
- 4. If possible relative humidity levels should be controlled in maintain levels below 60% and preferably below 50% ADDITIONAL DEHUMIDIFIERS ADDED TO 4/5/6 WING
- All remedial responses should be conducted in accordance with guidelines and standards established by US EPA, OSHA and IICRC remediation methods

# November 2023 Testing & Closeout Report

Mold	Laboratory Ana			
September 19, 2023 Round #1	September 25, 2023 Round #2	October 16, 2023 Round #3	November 13, 2023 Round #4	Comments for Round #4
NA	750 C/m³ - Asp/Pen	1,100 C/m <sup>3</sup> - Asp/Pen	200 C/m <sup>3</sup> - Asp/Pen	Asp/Pen and total spore counts
NA	750 C/m <sup>3 -</sup> Total	1,393 C/m <sup>3</sup> - Total	253 C/m <sup>3</sup> - Total	sufficiently reduced to acceptable levels
3,900 C/m <sup>3</sup> Asp/Pen 1,300 C/m <sup>3</sup> cladosporium	750 C/m³ - Asp/Pen	3,400 C/m³- Asp/Pen	53 C/m³ - Asp/Pen	Asp/Pen and total spore counts sufficiently reduced to acceptable levels
5,610 C/m <sup>3</sup> - Total	5,610 C/m <sup>3</sup> - Total	5,013 C/m <sup>3</sup> - Total	79 C/m³ - Total	
NA	210 C/m³- Asp/Pen 210 C/m³ – Total	Asp/Pen 243 C/m³-	No Asp/Pen present 40 C/m³ - Total	Asp/Pen and total spore counts sufficiently reduced to acceptable levels
NA	0 C/m <sup>3</sup> - Asp/Pen 53 C/m <sup>3</sup> - Total	560 C/m <sup>3</sup> - Asp/Pen 560 C/m <sup>3</sup> - Total	No Asp/Pen present 40 C/m³ - Total	Asp/Pen and total spore counts sufficiently reduced to acceptable levels
NA	NA	1,800 C/m <sup>3</sup> - Asp/Pen 1,920 C/m <sup>3</sup> - Total	No Asp/Pen present 67 C/m³- Total	Asp/Pen and total spore counts sufficiently reduced to acceptable levels
130 C/m <sup>3</sup> Asp/Pen 237 C/m <sup>3</sup>	0 C/m <sup>3</sup> - Asp/Pen 26 C/m <sup>3</sup> -	150 C/m <sup>3</sup> · Asp/Pen 163 C/m <sup>3</sup> ·	No Asp/Pen present 26 C/m³-	Asp/Pen and total spore counts at
Total	Total 0 C/m <sup>3</sup> - Asp/Pen	Total 0 C/m <sup>3</sup>	No Asp/Pen	acceptable levels  Asp/Pen and total
NA	26 C/m³ – Total	13 C/m³- Total	40 C/m <sup>3</sup> - Total	spore counts at acceptable levels
			53 C/m <sup>3</sup> - Asp/Pen 66 C/m <sup>3</sup> - Total	Asp/Pen and total spore counts at acceptable levels
0 C/m <sup>3</sup> Asp/Pen 3.350 C/m3 -	0 C/m <sup>3</sup> Asp/Pen 2.057 C/m3 -	0 C/m <sup>3</sup> - Asp/Pen 3.827 C/m <sup>3</sup> -	No Asp/Pen present 257 C/m³-	No Asp/Pen present. Typical outdoor levels
	September 19, 2023 Round #1  NA  NA  3,900 C/m³ - Asp/Pen 1,300 C/m³ - Total  NA  NA  NA  NA  NA  NA  NA  O C/m³ - Total  NA	September 19, 2023   Round #1   September 25, 2023   Round #1   Round #2   25, 2023   Round #1   Round #2   NA   September 1,300 C/m³   Asp/Pen   1,300 C/m³   Asp/Pen   210 C/m³   Asp/Pen   237 C/m³   Total   NA   NA   NA   NA   NA   NA   NA   N	For four Sampling Rounds   September 19, 2023   Round #1   Round #2   Round #3   Round	September 19, 2023

Good afternoon Superintendent Obey.

Thank you for sending us your descriptions of the actions that you have taken to investigate and correct the conditions identified in the Department of Labor Standards ("DLS") Complaint Letter dated September 27, 2023. DLS finds your responses satisfactory has closed DLS File # 24S-6410 on November 16, 2023, upon receipt of your last response.

Thank you for your cooperation and commitment to the safety and health of your employees. If you have any questions or require additional assistance, please do not health to contact me at 508-967-9947 or stephen dagle@mass.gov

Sincerely,

Stephen Dagle

Safety and Health Inspector

Massachusetts Department of Labor Standards

Workplace Safety and Health Program

72 School Street Taunton, MA 02780

Office 508-967-9947

Far 508-822-2033

Stephen Dagle@mass.gov www.mass.gov/dols/wshp

Notes: NA = not applicable/not collected; Bold = level and/or species of concern C/m³ = Spore counts per cubic meter of air

Asp/Pen = abbreviation for Aspergillus/Penicillium microbial species analysis detection

Total = total airborne spore level analysis for sample

# PTA Testing - Conducted on 10/10/23 Results shared with Administration 1/19/24

Table 1. Air Test - Mold Spore Trap Analysis Summary

Location	Outside and Inside spores/m <sup>3</sup>	Total spores/m <sup>3</sup>
Outside door of hallway opposite room 225	Ascospores (330), Basidiospores (1,200), Cladosporium (730), Epicoccum (7), Penicillium/Aspergillus types (230), Smuts, Periconia, Myxomycetes (37)	2,500
Room 280 (office)	Ascospores (7), Basidiospores (15), Cladosporium (15), Curvularian (7), Other brown (7), Penicillium/Aspergillus types (350), Smuts, Periconia, Myxomycetes (230)	630
Room 245	Ascospores (7), Basidiospores (15), Penicillium/Aspergillus types (930) Smuts, Periconia, Myxomycetes (59)	1000
Room 263	Ascospores (30), Basidiospores (89), Cladosporium (37), Other brown (15), Penicillium/Aspergillus types (37), Pithomyces (7), Rusts (7), Smuts, Periconia, Myxomycetes (170)	390
Music Room	Ascospores (22), Basidiospores (30), Cladosporium (22), Curvularia (7), Other Brown (7), Penicillium/Aspergillus types (15), Rusts (7), Smuts Periconia, Myxomycetes (160)	270
Teachers'	Ascospores (59), Basidiospores (140), Cladosporium (52) Curvularian (7), Other brown (30), Penicillium/Aspergillus types (1,300), Rusts (7), Smuts, Periconia, Myxomycetes (100)	1,700

\*Species highlighted in red indicate elevated spores and/or species with spores/m <sup>3</sup> detected at a higher level (>\*1.5) inside than outside.

AMold Score in Table 1 is a rating assigned by EMLab rated from 100 to 300 (see appendix 3). A rating less than 150 is low and indicates a low probability of spores originating inside. A rating greater than 250 is high and indicates a high probability that the spores originated from inside, presumably from indoor mold growth. A rating between 150 and 250 indicates a moderate probability of indoor fungal growth. The Scores assigned by EMLab to the air samples were all low (less than 150).

#### Table 2. Surface Samples and Direct Microscopic Examination Summary

Location	Species	Mold Analysis  Heavy Mold Growth	
Room 225 Blinds	Cladosporium species (spores, hyphae, conidiophores) 3+		
Room 280 Paper on shelf	Cladosporium species (spores, hyphae, conidiophores) 2+ Penicillium/Aspergillus group (spores) 1+	Mold Growth	
Room 263 Base of Door	None	Normal Trappings	
Music Room	None	Normal Trappings	
Teachers' Lounge Rug	Penicillium species (spores, hyphae) 3+	Heavy Mold Growth	
1 <sup>st</sup> and 2 <sup>nd</sup> grade hallway	Penicillium species (spores, hyphae) 2+ Cladosporium species (spores, hyphae 1+	Mold Growth	
Room 245 Blinds When interpreting surface s	Cladosporium species (spores, hyphae, conidiophores) 3+	Heavy Mold Growth	

When interpreting surface sample findings, mold growth is ranked into five categories, from <1+ to 4+. <1+ is evidence of very light growth, observed on the sample as indicated by spores of one type seen with underlying mycelial and/or with their sporulating structures found in less than 10% of the microscopic fields examined; 1+ is evidence of light mold growth indicated by spores of one type seen with underlying mycelial and/or sporulating structures found in 10 to 25% of the microscopic fields examined. 2+ is evidence of moderate growth, observed on the sample as indicated by spores of one type seen with underlying mycelial and/or with their sporulating structures found in le 26 to 50% of the microscopic fields examined; 3+ is evidence of heavy mold growth indicated by spores of one type seen with underlying mycelial and/or sporulating structures found in 51 to 75% of the microscopic fields examined, 4+ is evidence of very heavy mold growth indicated by spores of one type seen with underlying mycelial and/or sporulating structures found confluent in the majority of the microscopic fields examined.

# **PTA Testing Report Recommendations**

Recommendation	Completion	Notes
Establish a strong Health and Safety Committee	2-14-24-Ongoing	
2. Sanitize rooms where surface mold growth was detected (Room 225, 245, 250, 1st & 2nd grade hallway)	November 2023	Completed by Maintenance Staff
3. Consider removing rug in teacher's lounge		Rugs in teacher room, music room and library professional cleaned Thursday of February break, 2/22/24
4. Post remediation samples should be taken	3-12-24	
5. Monitor assess and investigate all sources of moisture. Install equipment to reduce relative humidity. If a sealing tile is stained, replace it and find and seal the source of moisture. Utilize portable air cleaners as needed	3-12-24-Ongoing	
6. Monitor humidity throughout the year, especially from May to October, do not leave building closed off. Maintain good housekeeping, good building maintenance practices. Consider purchasing industrial type dehumidification systems.	Ongoing	Additional dehumidifiers purchased 6-12-24
7. Increase circulation by eliminating areas of clutter	2-10-24	
8. During the rainy season assess the concrete slab	3-12-24	
9. Consider testing the air and surfaces for presence of mold spores in plenum above the drop ceiling. Test in representative locations in the building. At least 20% should be sampled to get a representative sample	Completed	Quarterly monitoring scheduled developed as part of side letter agreement
10. Take air flow measurements to determine if air flows are consistent with keeping the building dry	12-2020	Completed as part of building health check done by PureAir
11. Install or continue to use MERV 13 filters in all central air handlers	Ongoing	All units are double filtered with a MERV8/11 & MERV 12/13 and are changed regularly

#### **Hobomock Mold Photos**

Photo 1-Classroom Item

Photo 2-Classroom Item

Photo 3-Classroom Item











Photo 5- Stained ceiling tile by exit sign

Photo 6- Room 140

Photo 7- Missing ceiling tile

Photo 8- Staff restroom floor







Photo 10- Library Rug



Photo 11- Library rug



Photo 12- Tub of disinfectant wipes









# Photo Explanations and Associated Dates

- Photos 1,2 &3 classroom items
  - Concern Raised on 8/31/23
    - Remediation 8/31/23 Consultation with Health Agent, 9/1/23 contracted cleaning company to have all the classrooms in 4/5/6 wing environmentally cleaned
- Photo 4 floor kick plate in hall by art room
  - Concern Raised on 9/12/23
    - Remediation 9/13/23 Visual inspection by Health Agent professional opinion no mold growth- clean an monitor area 9/19/23 area inspected and tested by CIEC no elevated levels
- Photo 5 Stained Ceiling tile by exit sign
  - Concern raised 2/14/24
    - Remediation 2/20/24 ceiling tile replaced by maintenance staff no evidence of recurring leak
- Photo 6 Room 140
  - Concern raised on 11/29/23 and again on 2/14/24
    - Remediation Previous complaints of musty odor (11/2016) room not included in 9/19/23 testing or PTA testing on 10/10/23, contracted with CIEC to investigate root cause musty odor 2/26/24 & 3/12/24
- Photo 7 Missing Ceiling Tile
  - Concern raised 2/14/24
    - Remediation Ceiling tile replaced with new vinyl tile over February break
- Photo 8 Staff Restroom Floor
  - Concern raised 2/14/24
    - Remediation plumbing fixture replaced 2/21/24, no evidence of continued leak
- Photo 9, 10 & 11 Library Rug
  - o Concern raised 2/14/24
    - Remediation Rugs in teacher's room, music room and library professionally cleaned 2/22/24
- Photo 12
  - Concern raised 2/14/24
    - Remediation Bucket of wipes purchased in 2020 during COVID. Sealed plastic bucket with moistened wipes in a humid setting. Manufacturers instructions state storage is to be in a well ventilated space, keep cool and discard 12 months after production date.

## **PTA- PSC Collaboration**

- Several meetings were held from February June 2024 to establish a <u>side letter</u> of agreement on how air quality and mold concerns would be handled moving forward
- March 2024- Health and Safety Committee proposed work to continue to investigate the recurring moisture concerns at Hobomock
- Additional adjustments were made to the side letter to add the other buildings in for testing as well as to outline
  the process of how results and reports are shared and dispersed as well as developing protocols on how staff report
  concerns.
  - All five buildings tested November 2024, no elevated levels detected
  - Results and Reports received from School's CIEC expert shared in one joint email to administration and PTA per our agreement
    - PTA/MTA expert results/reports significant time lapse between sharing with PTA and sharing with administration (as evidenced by the October 2023 testing)
  - Joint Labor Management Committee (JLMC) consisting of PTA President, Vice President, Negotiations Chair,
     MTA expert Scott Fulmer, PPS expert Paul Matuszko, PHS principal Marc Talbot met on 10/7/24 to discuss
     protocols for reporting per our agreement
    - Administration created a flow chart and shared with PTA on 11/1/24
    - Still waiting on feedback from the PTA

# Results: Morning Sampling 3-12-24 vs Afternoon Sampling 2-28-24

		Table 4 Tape Lift (Bio-Tape) Surface Sampling Analysis Result		
Sample #	Sample Location	Species and Spore Estimate	Mycelial estimate (Current Growth potential)	Comment
		February 28, 2024 Sample Resu	ılts	
01T (#10)	Faculty Dining Room – Carpeting under table	Cladosporium – moderate level	Trace	Spores present but limited to no active growth.
02T (#11)	Hallway at classroom 135 (at lower wall cove base)	No fungi Detected	None	None present

Table 2 Spore Trap Air Sample Analysis Results March 12, 2024					
Sample #	Time	Sample Location	Total Fungi (C/m³)	Specific Species & levels of note	
3590 2815 (01)	~7:10 am	Classroom 240 - At back right side on rug (note: teacher present in room)	1,790 C/m <sup>3</sup>	Ascospores – 93 C/m <sup>3</sup> Aspergillus/Penicillium – 1,500 C/m <sup>3</sup> Basidiospores – 27 C/m Cladosporium – 170 C/m <sup>3</sup>	
3782 1619 (02)	~7:15 am	Classroom 225 - At front teacher's desk	93 C/m <sup>3</sup>	Aspergillus/Penicillium – 80 C/m <sup>3</sup> Basidiospores – 13 C/m	
3782 1592 (03)	~7:30 am	Classroom 135 - Near teacher's desk	26 C/m <sup>3</sup>	Ascospores – 13 C/m <sup>3</sup> Cladosporium – 13 C/m <sup>3</sup>	
3705 3099 (04)	~7:45 am	Classroom 125 - Near teacher's desk	27 C/m <sup>3</sup>	Myxomycetes – 27 C/m <sup>3</sup>	
3705 3108 (05)	~7:55 am	Music room – middle of room	67 C/m <sup>3</sup>	Ascospores – 27 C/m <sup>3</sup> Basidiospores – 13 C/m Cladosporium – 27 C/m <sup>3</sup>	
3782 1597 (06)	~8:05 am	Teacher's Lounge at table (HVAC on, no HEPA fan)	187 C/m <sup>3</sup>	Ascospores – 27 C/m <sup>3</sup> Aspergillus/Penicillium – 120 C/m <sup>3</sup> Basidiospores – 40 C/m	
3782 1624 (07)	~8:15 am	Classroom 140 - At teacher's desk (HVAC on, HEPA fan on)	80 C/m <sup>3</sup>	Basidiospores – 27 C/m Cladosporium – 53 C/m³	
3782 1604 (08)	~9:10 am	Library - At middle teacher's desk (room occupied, HVAC on, no HEPA fan present))	94 C/m <sup>3</sup>	Ascospores – 27 C/m <sup>3</sup> Aspergillus/Penicillium – 40 C/m <sup>3</sup> Basidiospores – 27 C/m	
3782 1588	~9:25 am	Outside ambient air (outside front entrance)	177 C/m <sup>3</sup>	Ascospores – 27 C/m <sup>3</sup> Basidiospores – 27 C/m	

Notes: Additional information on species types are provided in the Laboratory Analysis results.

Asn/Pen = abbreviation for Asperoillus/Penicillium microbial species analysis detection

	February 28, 2024	Sampling Rounds March 12, 2024		
Location/Room #	Round #1 *	Round #2 **	Comments	
Classroom # 225	4,500 C/m³ · Asp/Pen 840 C/m³ Cladosporium	80 C/m <sup>3</sup> Asp/Pen	Asp/Pen and total spore counts sufficiently reduced to acceptab	
(front)	5,393 C/m3-Total	93 C/m <sup>3 -</sup> Total	levels	
Classroom # 240	2,200 C/m <sup>3</sup> Asp/Pen	1,500 C/m <sup>3</sup> · Asp/Pen	Asp/Pen and total spore counts remain elevated at time of	
(back)	2,227 C/m³-Total	1,790 C/m3 - Total	sampling. Room occupied during 3/12/24 sampling.	
Music Room	3,500 C/m <sup>3</sup> · Asp/Pen 470 C/m <sup>3</sup> Cladosporium	No - Asp/Pen present	Asp/Pen and total spore counts sufficiently reduced to acceptable	
	3,996 C/m3-Total	67 C/m <sup>3</sup> -Total	levels	
Faculty Dining	No - Asp/Pen present	120 C/m <sup>3</sup> · Asp/Pen	Asp/Pen and total spore counts remain at acceptable levels	
Room (Teacher's Lounge)	149 C/m3 - Total	187 C/m <sup>3 -</sup> Total		
Classroom # 140	2,300 C/m <sup>3</sup> - Asp/Pen	No - Asp/Pen present	Asp/Pen and total spore counts sufficiently reduced to acceptab	
Classroom # 140	2,366 C/m³-Total	80 C/m <sup>3 -</sup> Total	levels	
Classroom # 135	No - Asp/Pen present	No - Asp/Pen present	Asp/Pen and total spore counts remain at acceptable levels	
Classicolii # 155	93 C/m <sup>3</sup> -Total	26 C/m <sup>3</sup> -Total		
01	1,500 C/m³ - Asp/Pen	No - Asp/Pen present	Asp/Pen and total spore counts	
Classroom # 125	1,674 C/m3 - Total	27 C/m <sup>3 -</sup> Total	sufficiently reduced to accepta levels	
Classroom # 110	240 C/m <sup>3</sup> · Asp/Pen	Not collected	Asp/Pen and total spore counts	
Classicoll # 110	333 C/m³ - Total	Not collected	initially at acceptable levels	
Library	Not collected	40 C/m <sup>3</sup> - Asp/Pen	Asp/Pen and total spore count	
	Not Collected	94 C/m <sup>3</sup> -Total	at acceptable levels	
Outside front entrance	No Asp/Pen present	No Asp/Pen present	No Asp/Pen identified, total levels	
(ambient air)	160 C/m <sup>3 -</sup> Total	177 C/m3 - Total	are low and typical for seaso	

Notes: \* - Late afternoon sampling after school in session, rooms mainly unoccupied, no HEPA fans operating

\*\* - early morning sampling with HVAC unit mainly off and rooms unoccupied. HEPA fans operating in classrooms and music room.

# February - March 2024- Additional Investigation Done by PMEC Full Report



## **Conclusions/ Recommendations**

#### 10.0 Conclusions

- A. The March 12, 2024 laboratory analysis results indicate that the airborne mold spore levels in the locations sampled were lower than February 28, 2024 sampling event. The results suggest that the spore levels are sufficiently low and acceptable on the sampling date. However, classrooms 240 was sampled and found to have an elevated level of Asp/Pen spores. HEPA fan units continue to assist in lowering airborne mold spores where utilized.
- B. Surface tape lift sampling results indicate mold growth in select areas including the Classroom 240 bench underside, within the Classroom 140 ceiling supply vent, and on the roof top unit ACU#1 interior duct liner.
- C. The current results and conditions suggest the classrooms and other rooms sampled, except for classroom 240, are generally at a Condition 1 – normal indoor ecology environment per the IICRC guidelines.
- D. The on-going cleaning and HEPA air filtering in the designated classrooms has assisted in lowering airborne spore levels.

#### 11.0 Recommendations

- A. Continue operating portable HEPA fan units in classrooms on an ongoing basis.
- B. Additional investigation and assessment of building surfaces and roof top units should be conducted to further determine potential microbial sources and reservoirs. The School Administration should develop a detailed response action plan that includes focused remediation and HVAC system improvements. This assessment should include further inspection of perimeter bench tops, ceiling diffusers, carpeting/ area rugs for sources of microbial sources.
- C. Additional sampling is not recommended at this time until building surfaces and components are assessed and corrective actions implemented.
- D. A detailed action plan should be developed to determine the proper sequence and schedule in performing recommended response actions. These response actions include a combination of HVAC system and classroom cleaning. Response actions that may be developed, scheduled, and implemented include, but are not limited, to:
  - 1. Remediation and encapsulation of bench top wood undersides.
  - 2. Roof top unit cleaning, operations and maintenance (O&M) servicing, etc.
  - 3. Cleaning and encapsulation of interior duct liners.
  - 4. HVAC system, ceiling diffusers, and duct cleaning.
  - 5. Classroom cleaning and disinfection
  - 6. Steam cleaning and regular HEPA vacuuming of carpeting and area rugs.
  - 7. Revising HVAC system operation schedules and utilizing open window ventilation.

#### **Remediation Work Completed Summer 2024:**

- All Air Handling Units and Associated Supply Duct work were professionally cleaned
- All the carpeted benches in the 4/5/6 wing were professionally removed
- General Summer cleaning in all classrooms
- Carpeting in Music Room was replaced with Tile Flooring (following 8/14/24 quarterly testing)
- Hospital grade <u>HEPA Air Scrubbing Units</u> were acquired to give an added accommodation for allergen sensitive individuals
- Carpets in Large Group Instruction Room, Library and Teachers cleaned
- Blinds in all classrooms disinfected

# **Ongoing Quarterly Monitoring**

- August 2024-<u>Hobomock</u>
  - Two concerns identified
    - Music Room -
      - pipe leaking in ceiling above the door (vendor repaired 8-16-24)
      - Carpet replaced with Tile 8-21-24
    - Room 240 -
- Dehumidifier Recommended for space
- November 2024 <u>Hobomock</u>, <u>Bryantville</u>, <u>North Pembroke</u>, <u>PCMS</u>, <u>PHS</u>
  - No concerns or elevated levels noted at any of the buildings in the November testing
  - Recommended replacement of stained ceiling tiles across the district
  - Recommended maintenance staff continue vacuuming with HEPA vacuums and more thorough cleaning by staff of surfaces

# What Happens when a Concern arises outside the Quarterly Testing at Hobomock?

- Concern was raised regarding a Supply Closet in the Large Group Instruction Room (9/2024)
  - Non-Student or Staff Space, no shared Air Exchange with the rest of the building
  - Serviced by 2 New Ductless Air Conditioning Systems with built in dehumidifiers that were replaced
     Summer of 2024
- Moldy conditions present in closet including drywall that was cut away when the units were replaced over the summer









# Remediation-Completed 10/2024

Table 1 Spore Trap Air Sample Analysis Results				
Sample #	Sample Location	Total Fungi (C/m³)	Specific Species & levels of note	
3782 1643 (01)	Assembly Room 203 – back middle area (outside containment)	147 C/m <sup>3</sup>	Ascospores – 67 C/m³ Aspergillus/Penicillium – 80 C/m³ (Acceptable levels)	
3782 1645 (02)	Room 203 closet – back side (post-test in containment)	133 C/m <sup>3</sup>	Ascospores – 53 C/m³ Aspergillus/Penicillium – 80 C/m³ (Acceptable levels)	
3782 1642 (03)	Room 203 closet – front corner (post-test in containment)	133 C/m <sup>3</sup>	Ascospores – 53 C/m³ Aspergillus/Penicillium – 80 C/m³ (Acceptable levels)	
3782 1661 (04)	Outside Ambient air (outside front entrance)	410 C/m <sup>3</sup>	Ascospores – 210 C/m³ Aspergillus/Penicillium – 67 C/m³ Basidiospores – 80 C/m³ Cladosporium – 53 C/m³ (normal levels, typical for fall season)	

	Table 2 Tape Lift (Bio-Tape) Surface Sampling Analysis Results				
Sample #	Sample Location	Mold Spore Estimate /	Mycelial estimate (Growth potential)		
10T	Room 203 closet – lower front right wall	No fungi identified	None found		
11T	Room 203 closet – Back wall heater vent on metal cover	No fungi identified	None found		

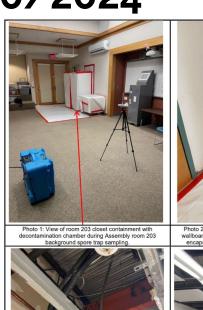




Photo 2: View of 203 closet front right corner showing wallboard removed and back side of exposed wallboard encapsulated. Remaining surfaces decontaminated.



Photo 3: View of room 203 closet into ceiling plenum. Ceiling board and moldy pipe insulation removed and surfaces



Photo 4: View of room 203 storage closet containment during post remediation spore trap sampling. Surfaces and heater fan cleaned free of suspect mold and debris.

### Costs

#### **To Date - August 2023-Present Day**

- PMEC Testing Interpretation of Results -Recommendations for Remediation
  - \$32,720.00
- Air Duct Services Cleaning of Supply Duct Work at Hobomock
  - **\$67,183.52**
- North Star Cleaning and Servicing of Rooftop Units
  - **\$17,138.23**
- North Star -Replacement of Ductless AC in LIR
  - \$24,761.00
- Allied Environmental Remediation of LIR
  - **\$6,800.00**
- Related Service Providers for Cleaning Stanley Steamer/ServPro
  - **■** \$5,415.07
- Replacement of Flooring in Music Room-
  - **\$12,441.40**
- TOTAL \$166,459.22

#### **Anticipated Future Costs:**

- PMEC Quarterly Monitoring -
  - \$2,200/visit
- HVAC Replacement at Hobomock -
  - \$1.3 \$1.6 million
- Continuation of Carpet Removal Project-
  - \$100,000

The HVAC replacement is a compilation of funds requested as Capital at Town Meetings for the previous 4 years.

The flooring project is a request on the 2025 Spring Town Meeting Capital Article

# February Testing

- Hobomock Quarterly Testing Completed
   2-13-25
- Areas of Concern Tested 2-7-25
  - PHS Materials in the Art Classroom &
     Stained Ceiling Tiles
  - PCMS Stained Ceiling Tiles & Carpet in Lower Level Classroom
  - Hobomock Carpets in 3 locations & area behind a bulletin board that had come off the wall
- Joint Labor Management Committee is meeting 3-5-25 to discuss results and next steps
- Results/Reports will be posted to the website following that meeting

# **Appendix**

- Hobomock Building History
- ASHRAE Guidelines
- <u>CDC Guidance Regarding Mold</u>
- EPA Tools for Schools

# **Hobomock Building History**

- Originally constructed in 1974 with and addition (4-5-6 wing) in 1997
- Brick and concrete construction
- Single Story Flat Roof Cement Slab