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December 22, 2021

Mr. Michael Lane
Environmental Health & Safety Manager
Office of Court Management/
Facilities Management & Court Capital
Massachusetts Superior Courts
Lowell Justice Center
370 Jackson Street
Lowell, MA 01852

VIA EMAIL

AXIOM Project 01275.007

RE: Indoor Air Quality Testing, Springfield District Courthouse, 50 State Street, Springfield, MA

Dear Mr. Lane,

At your request, Axiom Partners, Inc. (AXIOM) performed indoor air quality (IAQ) testing at the referenced courthouse building. The testing was performed on November 30, 2021, by AXIOM Industrial Hygienist, Michael Keady. The IAQ survey consisted of the following:

I. INDOOR AIR TESTING AND OBSERVATIONS

1. Visual Assessment of Interior Spaces

AXIOM performed a general inspection of the interior spaces for visible signs of potential water damage or mold/fungal growth. This did not include above ceiling spaces and HVAC equipment.

2. General Air Quality Testing Parameters

AXIOM performed testing of IAQ parameters throughout the building using a direct reading Q-Trak® IAQ Monitor which continuously measures and records levels of carbon monoxide (CO), carbon dioxide (CO_2), temperature and relative humidity (rH).

AXIOM positioned the Q-Trak in 27 locations over the course of the day, with run times in each location ranging between 10 and 20 minutes. Locations were chosen to represent general air quality and the locations are documented on the attached floor plans.

Results are compared with established indoor air quality guidelines which are used to assess the adequacy of IAQ and ventilation.

3. Air Testing for Volatile Organic Compounds (VOCs)

A calibrated TSI GM460 Gas Monitor was used to take real-time spot readings for VOCs[1] in multiple locations throughout the building. The GM460 is a hand-held device that detects and measures more than 600 of the most common VOCs and has a lower detection limit of 1.0 ppb.

[1] Includes a library of over 600 common VOCs

The screening locations and associated Gas Monitor responses were be recorded on an indoor air sampling form. The locations mimicked the Q-Trak sampling locations.

4. Air Testing for Total Dust

AXIOM performed continuous dust monitoring throughout the building using a direct-reading TSI SidePak™ AM520i dust monitor unit. This portable unit measured and recorded total dust concentrations.

The SidePak™ Personal Aerosol Monitor AM520i is a portable, battery-operated, data-logging, device that provides real-time aerosol mass concentration readings of dusts, fumes, mists, smoke and fog.

AXIOM periodically moved the SidePak units throughout the building mimicking the Q-Trak and VOC sampling locations.

5. Air Testing for Non-Culturable Mold (Fungi)

AXIOM also collect air samples for direct optical examination for mold and fungal spores using Allergenco-D air sampling cassettes which are used for the rapid collection and analysis of a wide range of airborne aerosols, including fungal spores, pollen, insect parts, skin cell fragments, fibers, and inorganic particulates. AXIOM collected 10 air samples from inside the building and 2 outdoor baseline/control samples (12 total samples).

The air samples were analyzed by EMSL Analytical, inc. (EMSL) located in Woburn, MA. EMSL is accredited under the American Industrial Hygiene Association (AIHA) for fungal analysis. A chain-of-custody form was used to document sample handling and to specify analytical requirements.

II. SUMMARY OF INDOOR AIR TESTING

1. Observations

During the course of performing the air testing, AXIOM inspected interior spaces in the building and made the following observations:

1. There were numerous areas with dirty HVAC diffusers and adjacent ceiling tiles;
2. No visible signs and no odors associated with mold/fungi were noted in the building;
3. There were water-stained ceiling tiles by the windows in the Law Library;
4. Most areas in the building appeared to be relatively clean; and,
5. Some unidentified stains were observed on carpets in some offices (possibly from drink/coffee spills).

2. General Air Quality Testing Parameters, VOCs and Total Dust

Table 1 provides a summary of the Q-Trak, SidePak and GM460 indoor air quality testing. In addition to our IH taking regular measurements and recording them on a field form, the Q-Trak and SidePak units operated in the data logging mode where they recorded and logged readings every 60 seconds throughout the sampling period. The GM460 is an automatic datalogging device that collects readings every 5 minutes when operational. The Q-Trak experienced some issues in data logging and did not capture data after 10:44 am.

TABLE 1
SUMMARY OF Q-TRAK, SIDEPAK AND GM460 TESTING RESULTS

AIR QUALITY PARAMETER	MINIMUM / MAXIMUM OF MEASURED VALUES	AVERAGE OF MEASURED VALUES	GUIDELINES
Temperature (T)	48.4 / 80.7 °F	71.2 °F	68 – 75 °F [a,b] 73 – 79 °F (summer)
Relative Humidity (rH)	15.3 / 27.9 %	18.6 %	30 – 60% [a,b]
Carbon Dioxide (CO_2)	489 / 773 ppm	592 ppm	≤ 800 ppm [b,c]
Carbon Monoxide (CO)	0.0 / 0.1 ppm	0.0 ppm	9 ppm [a,b]/50 ppm [d]
Volatile Organic Compounds (VOC)	0 / 63 ppb	11.8 ppb	300 ppb [b, e]
Total Airborne Particulate	0 / 0.016 mg/m^3	0.002 mg/m^3	15.0 mg/m^3 [d]

[a] ASHRAE 55-2013 Std. (American Society of Heating, Refrigerating & Air Conditioning Engineers).
[b] ≤ means less than or equal to, °F = degrees Fahrenheit, % = percent, ppm = parts per million, ppb = parts per billion, mg/m^3 = milligrams per cubic meter; TWA = Time Weighted Average over 8-hours
[c] Occupational Safety & Health Administration (OSHA) proposed indoor air quality (IAQ) rule (59 FR 15968).
[d] OSHA (Occupational Safety and Health Administration) Permissible Exposure Limit.
[e] Refer to attached Total VOC summary table in Attachment 6.

Attachment 1 includes the field recording forms. The Q-Trak, SidePak and GM460 data summaries and graphs are provided in Attachment 2.

4. Air Testing for Non-Culturable Mold (Fungi)

Table 4 provides a summary of the spore trap air sampling results. The complete laboratory report is provided in Attachment 4.

TABLE 4
SUMMARY OF AIRBORNE FUNGAL SPORE TESTING RESULTS

SAMPLE NUMBER	LOCATION	TOTAL FUNGI (S/m^3)[1]	MOLD SPORE TYPE
4480488	Basement, Hall by Mechanical Room G42	100	Basidiospores
4480484	Basement, Mechanical Room G42	0	None Detected
4480512	Plaza, Elevator Lobby	230	Aspergillus/Penicillium, Basidiospores, Myxomycetes
4480498	Hall by Parking Ticket Office	80	Cladosporium, Myxomycetes
4480478	Hall by District Court 6	200	Aspergillus/Penicillium
4480483	Room 242	0	None Detected
4480542	Hall by Superior Court 1	130	Basidiospores, Aspergillus/Penicillium
4480476	Law Library	40	Myxomycetes
4480463	4th Floor, Elevator Lobby	40	Basidiospores
4480456	Hall by Probate Court 1	0	None Detected

SAMPLE NUMBER	LOCATION	TOTAL FUNGI (S/m^3)[1]	MOLD SPORE TYPE
4480457	Building Exterior by Main Entrance	320	Basidiospores, Fusarium, Myxomycetes
4480454	Building Exterior by Next to State St.	90	Myxomycetes

[1]S/m^3 = spore counts per cubic meter of air

Airborne fungi below 250 S/m^3 are normally not a concern for indoor environments[2]. Airborne levels outdoors are normally between 500 and 1,000 S/m^3, but, can easily exceed 10,000 S/m^3 during the spring and summer months. Indoor airborne levels between 250 and 1,000 S/m^3 are typically considered to be moderate and levels that exceed 1,000 S/m^3 are often considered elevated[3] and may result in active mold growth.

It is important to note that bioaerosols (fungi/mold) are always present and it is the excess quantity of microorganisms that can be of concern. By comparing the microbiological profiles of indoor sample results to outside samples, it is often possible to determine if amplification of microorganisms is occurring within the building.

III. CONCLUSIONS

In review of the testing and investigation performed in the target area, the following summarizes the results:

1. Dirty HVAC diffusers and adjacent ceiling tiles were observed in numerous areas throughout the building;
2. There were water-stained ceiling tiles by the windows in the Law Library;
3. No odors associated with mold/fungi were noted in the building; and
4. General air quality measurements were all within acceptable limits.

The following, additional steps may be taken should complaints continue:

- Investigate fresh air intake vents for proximity to potential sources of contaminants;
- Visually inspect ductwork and HVAC air handler units for signs of mold or moisture;
- Perform a more detailed investigation of the affected spaces for mold, including an infrared survey and moisture testing; and,
- Perform a thorough cleaning of dirty and stained carpets.

Although the TVOC levels are considered acceptable, it should be noted that as a result of increased cleaning and sanitizing inside building due to Covid-19, reports of higher-than-normal levels of VOCs inside buildings have been on the rise.

Please do not hesitate to contact us if you have any questions.

Sincerely,

Evan MacArthur
Project Manager/Sr.
Industrial Hygienist

Stephen E. Minassian
Principal

Edward K. Kearney, CIH
Principal

[2] New York Committee for Occupational Safety and Health
[3] Occupational Safety and Health Administration Technical Manual, Section III, Chapter 2, § IV (c)

Attachments: A1, Field data forms
A2, Direct Read Instrument Reports
A3, Fungi/mold testing report
A4, Sample location floor plans
A5, TVOC reference table

ATTACHMENT 1

FIELD DATA FORMS

IAQ READINGS

Date: 11/30/21
Project No.: 01275.007
Industrial Hygienist(s): Michael Keady

Location: 50 State St, Springfield MA
Project Name: Air Quality Investigation, Springfield Hall of Justice

TIME	LOCATION	TEMP (°F)	RH (%)	CO_2 (PPM)	CO (PPM)	VOCS (PPB)	PART. (MG/M^3)
0924	Basement, Snack Bar G54	66.9	21.1	623	0.1	0	0.001
0939	Basement, Facilities Office G48	68.7	20.1	535	0.1	0	0.003
0951	Basement, Hallway Outside Mechanical Room G42	70.0	18.0	570	0.0	0	0
1003	Basement, Mechanical Room G42	73.1	16.9	566	0.1	0	0.006
1014	Garage, Between Stair and Ramp Entrances	48.8	27.9	489	0.0	1	0.016
1027	1st Floor, Main Elevator Lobby	67.4	20.9	661	0.1	13	0
1040	1st Floor, Next To Security Counter 144A	67.2	20.4	773	0.1	10	0.006
1052	1st Floor, Hallway Outside District Court 1	69.2	19.0	596	0.0	10	0.002
1104	1st Floor, Hallway Outside Stairwell 1 and Forensic Health Office 140	72.4	17.4	586	0.1	11	0
1116	1st Floor, Hallway Outside Clerk of District Court Criminal Office 110B	68.7	18.3	548	0.0	8	0
1127	1st Floor, Outside Parking Ticket Office 100	67.8	19.0	557	0.0	9	0
1138	2nd Floor, Main Elevator Lobby	72.2	18.4	646	0.1	13	0
1149	2nd Floor, Hallway Outside District Court 6	73.4	18.5	677	0.1	14	0
1200	2nd Floor, Hallway Outside District Court 3	73.7	16.6	599	0.1	13	0
1211	2nd Floor, Room 242	71.1	18.0	586	0.0	11	0
1222	2nd Floor, Hallway Outside Stairwell 1 and Room 223A	72.9	17.6	543	0.0	13	0
1233	3rd Floor, Hallway Outside Superior Court 2	73.7	17.8	631	0.0	20	0
1244	3rd Floor, Outside Superior Court 6	73.7	17.6	608	0.1	15	0
1256	3rd Floor, Law Library Stacks 25-26	80.7	15.3	562	0.1	19	0.012
1307	3rd Floor, Hallway Outside Superior Court 4	75.4	16.5	563	0.1	17	0
1319	3rd Floor, Clerk Of Superior Court Office	75.9	16.4	550	0.0	17	0
1329	4th Floor, Main Elevator Lobby	73.2	18.2	592	0.1	16	0
1340	4th Floor, Hallway Outside Probate Court 2	73.2	18.5	595	0.0	17	0
1351	4th Floor, Registry Of Probate Office	73.9	18.1	597	0.0	18	0

°F = degrees Fahrenheit; % = percent; ppm = parts per million, mg/m^3 = milligrams per cubic meter

IAQ READINGS

Date: 11/30/21
Project No.: 01275.007
Industrial Hygienist(s): Michael Keady

Location: 50 State St, Springfield MA
Project Name: Air Quality Investigation, Springfield Hall of Justice

TIME	LOCATION	TEMP (°F)	RH (%)	CO_2 (PPM)	CO (PPM)	VOCS (PPB)	PART. (MG/M^3)
1402	4th Floor, Hallway Outside Probate Court 1	73.2	18.4	584	0.0	15	0
1413	4th Floor, Hallway Outside Registry Of Deeds	72.9	18.4	583	0.0	15	0
1424	4th Floor, Employee Lounge 427	73.7	18.4	576	0.0	14	0

°F = degrees Fahrenheit; % = percent; ppm = parts per million, mg/m^3 = milligrams per cubic meter

ATTACHMENT 2

Q-TRAK SUMMARY REPORT & GRAPH,
SIDEPAK PARTICULATE REPORT & GRAPH
GM460 SUMMARY REPORT & GRAPH

Instrument		Data Properties	
Model	VelociCalc/Q-Trak 7575	Start Date	11/30/2021
Meter S/N	7575X1910009	Start Time	9:21:19
Probe Model	982	Stop Date	11/30/2021
Probe S/N	P19140039	Stop Time	14:22:40
Meter Cal Date	03/10/2021	Total Time	5:01:21
CO2 Cal	03/10/2021	Logging Interval	10 seconds
Temperature Cal	03/10/2021		
Humidity Cal	03/10/2021		
CO Cal	03/10/2021		

	CO2 ppm	T deg F	H %rh	CO ppm	BP inHg
Max	767	73.1	30.6	1.1	29.94
Min	474	48.2	16.9	0	29.82
Avg.	578	66.3	20.7	0.1	29.87

Q-Trak Test Data

Sample	Date	Time	CO2 ppm	T deg F	H %rh	CO ppm	BP inHg
1	11/30/2021	9:22:19	669	64.4	23.6	0	29.9
2	11/30/2021	9:23:19	635	65.5	22.2	0	29.9
3	11/30/2021	9:24:19	607	66.3	21.5	0.1	29.9
4	11/30/2021	9:25:19	624	67	21.2	0.1	29.9
5	11/30/2021	9:26:19	632	67.6	20.4	0.1	29.9
6	11/30/2021	9:27:19	597	68.3	22.2	0.1	29.91
7	11/30/2021	9:28:19	545	67.4	19.9	0.1	29.91
8	11/30/2021	9:29:19	538	67.7	20.9	0.1	29.91
9	11/30/2021	9:30:19	539	68	20.8	0.1	29.91

UNDERSTANDING, ACCELERATED

Test 1 Report

Name: Test 1

Description: None

Location: Unknown

Instrument Name: SidePak Aerosol Monitor

Device Model Number: AM520

Device Serial Number: 5201912003

Firmware Version: A.08

Last Factory Calibration: 3/12/2021

Data Properties	
Start Date	11/30/2021
Start Time	12:58 PM
End Date	11/30/2021
End Time	3:26 PM
Test Length	00:02:28:00
Logging Interval	60 second(s)
Number of Data Points	148

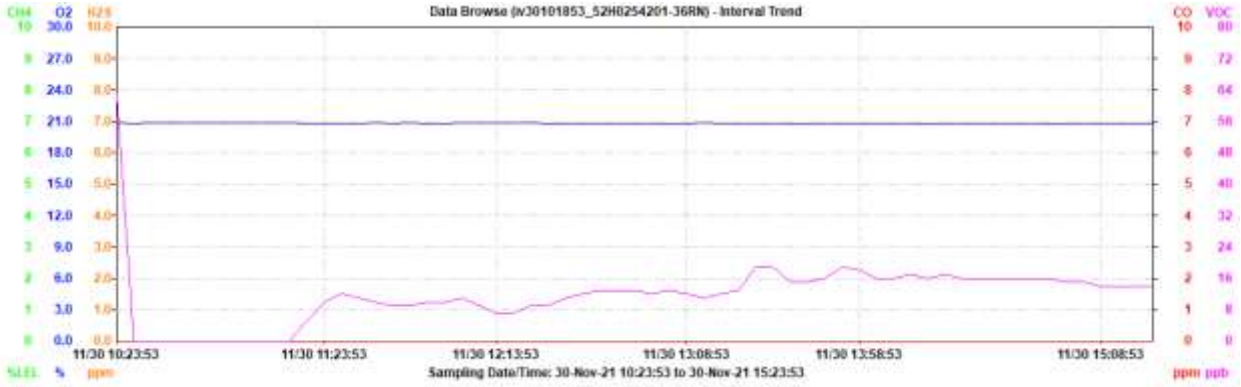
Additional Information
There is no metadata related to this test

Test Statistics					
Channel	Average	Minimum	Maximum	Cal Factor	TWA
Aerosol (mg/m³)	0.001	0 11/30/2021 03:23:52	0.006 11/30/2021 02:10:52	1 Factory 06/27/2021	0

Date	Time	Aerosol (mg/m³)	Alarms
11/30/2021	12:59:52 PM	0.002	None
11/30/2021	1:00:52 PM	0.002	None
11/30/2021	1:01:52 PM	0.001	None
11/30/2021	1:02:52 PM	0.001	None
11/30/2021	1:03:52 PM	0.001	None
11/30/2021	1:04:52 PM	0.002	None
11/30/2021	1:05:52 PM	0	None
11/30/2021	1:06:52 PM	0	None
11/30/2021	1:07:52 PM	0	None
11/30/2021	1:08:52 PM	0	None
11/30/2021	1:09:52 PM	0	None
11/30/2021	1:10:52 PM	0.002	None
11/30/2021	1:11:52 PM	0	None
11/30/2021	1:12:52 PM	0	None
11/30/2021	1:13:52 PM	0.001	None
11/30/2021	1:14:52 PM	0	None
11/30/2021	1:15:52 PM	0	None
11/30/2021	1:16:52 PM	0.001	None
11/30/2021	1:17:52 PM	0.001	None
11/30/2021	1:18:52 PM	0	None
11/30/2021	1:19:52 PM	0.001	None
11/30/2021	1:20:52 PM	0	None
11/30/2021	1:21:52 PM	0.001	None
11/30/2021	1:22:52 PM	0	None
11/30/2021	1:23:52 PM	0.001	None
11/30/2021	1:24:52 PM	0.001	None
11/30/2021	1:25:52 PM	0.001	None
11/30/2021	1:26:52 PM	0	None
11/30/2021	1:27:52 PM	0.002	None
11/30/2021	1:28:52 PM	0.001	None
11/30/2021	1:29:52 PM	0.001	None

GM460 VOCs 11/30/21

Gas(FullScale)	Avg	Max	Max Date/Time	Min	Min Date/Time	Warning	Alarm	STEL	TWA
CH4(100%LEL)	0 %LEL	0 %LEL	11/30/2021 10:18	*****	*****	10 %LEL	50 %LEL	*****	*****
O2(40.0%)	20.80%	20.90%	11/30/2021 10:18	20.40%	11/30/2021 15:23	19.50%	23.50%	*****	*****
H2S(100.0ppm)	0.0 ppm	0.0 ppm	11/30/2021 10:18	*****	*****	5.0 ppm	30.0 ppm	5.0 ppm	1.0 ppm
CO(500ppm)	0 ppm	1 ppm	11/30/2021 11:12	*****	*****	25 ppm	50 ppm	200 ppm	25 ppm
VOC(50000ppb)	11 ppb	412 ppb	11/30/2021 10:18	*****	*****	5000 ppb	10000 ppb	*****	*****



ATTACHMENT 3

EMSL MOLD AIR SAMPLING LABORATORY REPORT

EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801
Tel/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com / bostonlab@emsl.com

EMSL Order: 132109229
Customer ID: AXIO80
Customer PO:
Project ID:

Attention: Evan MacArthur
Axiom Partners, Inc.
50B Salem Street, Suite 103
Lynnfield, MA 01940

Project: 01275.007 - 50 State Street

Phone: (781) 213-9198
Fax: (781) 213-6992
Collected Date: 11/30/2021
Received Date: 12/02/2021
Analyzed Date: 12/09/2021

Test Report: Allergenco-D(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

	132109229-0001			132109229-0002			132109229-0003		
Lab Sample Number:									
Client Sample ID:	4480488			4480484			4480512		
Volume (L):	75			75			75		
Sample Location:	Basement, Hall Outside Mech Room			Basement, Mech Room G42			Plaza, Elevator Lobby		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	-	-	-	-	-	-	2	90	39.1
Basidiospores	3	100	100	-	-	-	1	40	17.4
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	3	100	43.5
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Cercospora++	-	-	-	-	-	-	-	-	-
Total Fungi	**3**	**100**	**100**	**-**	**None Detected**	**-**	**6**	**230**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	43	-	-	43	-	-	43	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

No discernable field blank was submitted with this group of samples.

Steve Grise, Laboratory Manager
or other Approved Signatory

Initial report from: 12/09/2021 08:29 AM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801
Tel/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com / bostonlab@emsl.com

EMSL Order: 132109229
Customer ID: AXIO80
Customer PO:
Project ID:

Attention: Evan MacArthur
Axiom Partners, Inc.
50B Salem Street, Suite 103
Lynnfield, MA 01940

Project: 01275.007 - 50 State Street

Phone: (781) 213-9198
Fax: (781) 213-6992
Collected Date: 11/30/2021
Received Date: 12/02/2021
Analyzed Date: 12/09/2021

Test Report: Allergenco-D(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

	132109229-0004			132109229-0005			132109229-0006		
Lab Sample Number:									
Client Sample ID:	4480498			4480478			4480483		
Volume (L):	75			75			75		
Sample Location:	Parking Ticket Office, Outside			Outside District Court 6			Room 242		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	-	-	-	4	200	100	-	-	-
Basidiospores	-	-	-	-	-	-	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	1	40	50	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	1	40	50	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Cercospora++	-	-	-	-	-	-	-	-	-
Total Fungi	**2**	**80**	**100**	**4**	**200**	**100**	**-**	**None Detected**	**-**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	43	-	-	43	-	-	43	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

No discernable field blank was submitted with this group of samples.

Steve Grise, Laboratory Manager
or other Approved Signatory

Initial report from: 12/09/2021 08:29 AM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801
Tel/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com / bostonlab@emsl.com

EMSL Order: 132109229
Customer ID: AXIO80
Customer PO:
Project ID:

Attention: Evan MacArthur
Axiom Partners, Inc.
50B Salem Street, Suite 103
Lynnfield, MA 01940

Phone: (781) 213-9198
Fax: (781) 213-6992
Collected Date: 11/30/2021
Received Date: 12/02/2021
Analyzed Date: 12/09/2021

Project: 01275.007 - 50 State Street

Test Report: Allergenco-D(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

Lab Sample Number:	132109229-0007			132109229-0008			132109229-0009		
Client Sample ID:	4480542			4480476			4480463		
Volume (L):	75			75			75		
Sample Location:	Outside Superior Court #1			Law Library			4th Floor Elevator Lobby		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	2	90	69.2	-	-	-	-	-	-
Basidiospores	1	40	30.8	-	-	-	1	40	100
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	1	40	100	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Cercospora++	-	-	-	-	-	-	-	-	-
Total Fungi	**3**	**130**	**100**	**1**	**40**	**100**	**1**	**40**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	43	-	-	43	-	-	43	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	-	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	-	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

No discernable field blank was submitted with this group of samples.

Steve Grise, Laboratory Manager
or other Approved Signatory

Initial report from: 12/09/2021 08:29 AM

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Phone: (781) 213-9198
Fax: (781) 213-6992
Collected Date: 11/30/2021
Received Date: 12/02/2021
Analyzed Date: 12/09/2021

Test Report: Allergenco-D(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-201, ASTM D7391)

	132109229-0010			132109229-0011			132109229-0012		
Lab Sample Number:									
Client Sample ID:	4480456			4480457			4480454		
Volume (L):	75			75			75		
Sample Location:	Outside Probate Court #1			Outside Building			Outside Building		
Spore Types	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**	**Raw Count**	**Count/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium	-	-	-	-	-	-	-	-	-
Basidiospores	-	-	-	1	40	12.5	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	-	-	-	-	-	-	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	1	40	12.5	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	5	200	62.5	2	90	100
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Cercospora++	-	-	-	1	40	12.5	-	-	-
Total Fungi	**-**	**None Detected**	**-**	**8**	**320**	**100**	**2**	**90**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	43	-	-	43	-	-	43	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	-	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

++ Includes other spores with similar morphology; see EMSL's fungal glossary for each specific category.

No discernable field blank was submitted with this group of samples.

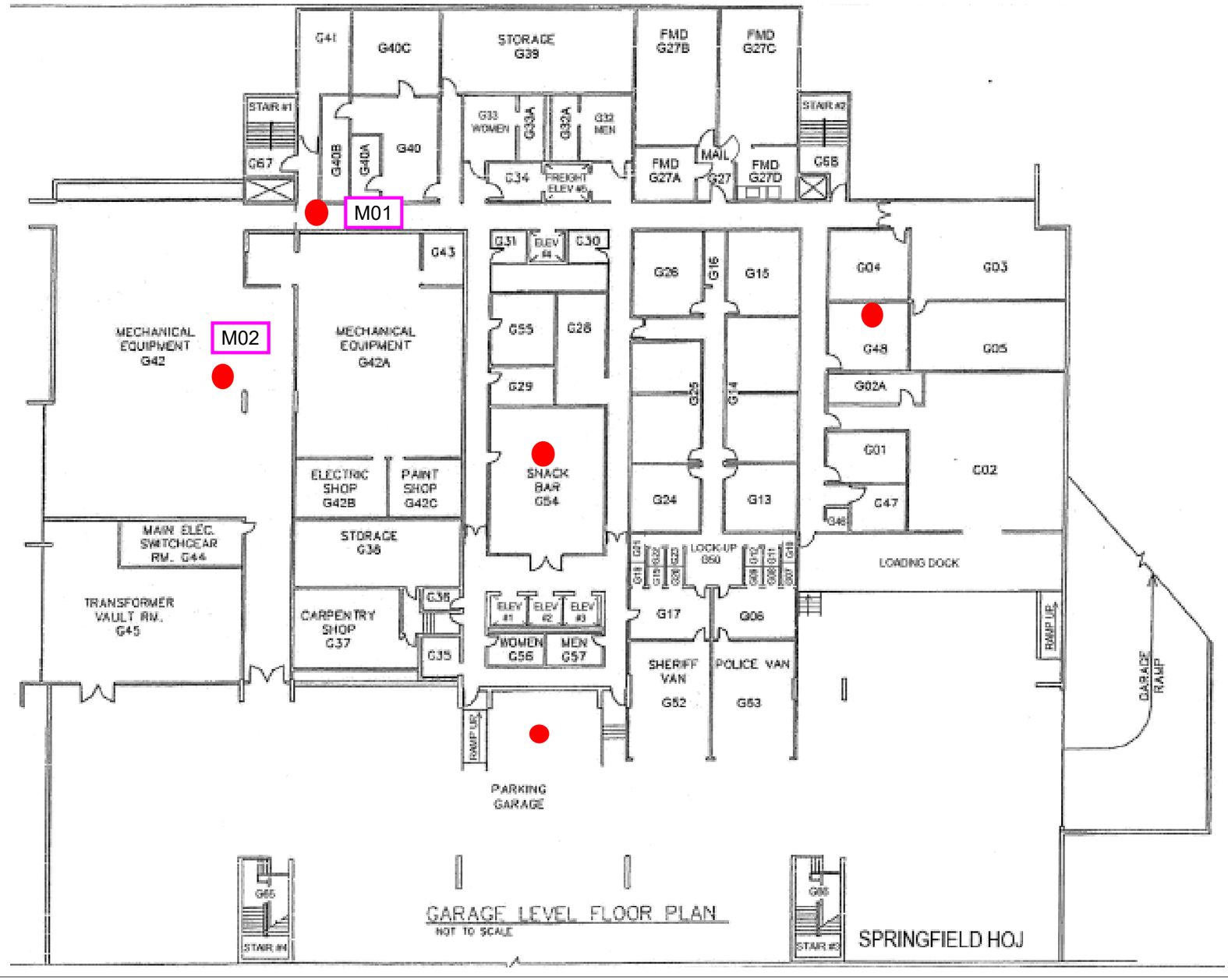
Steve Grise, Laboratory Manager
or other Approved Signatory

Initial report from: 12/09/2021 08:29 AM

For information on the fungi listed in this report, please visit the Resources section at www.emsl.com

ATTACHMENT 4

SAMPLE LOCATION FLOOR PLANS



LEGEND

IAQ Sample Location

M01 Mold Sample Location

Bi-Weekly IAQ Survey

Round 3 of 6
November 30, 2021

1 SPRINGFIELD HOJ
BASEMENT PLAN

PLAN NOT FOR CONSTRUCTION

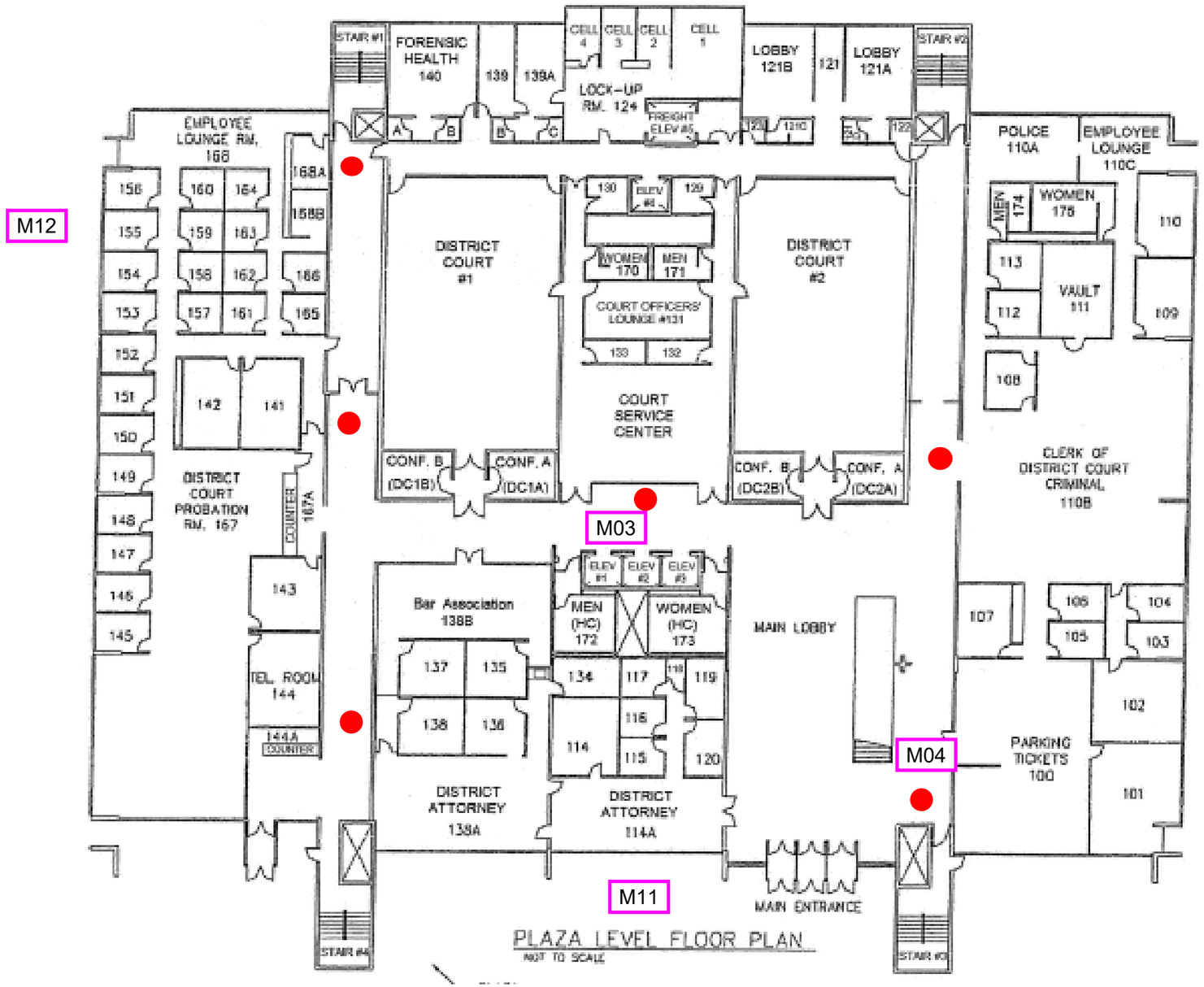
REVISIONS | DATE

NORTH

50 State Street, Springfield MA

AXIOM PARTNERS, INC.
50 B Salem St., Suite 103
LynnField, MA 01940
(781) 213-9198
www.axiomenv.com

DRAWING TITLE: Springfield HOJ Basement Plan	PROJECT TITLE: SHOJ IAQ Survey 50 State St, Springfield MA	DATE: 11/30/21	
APPROVED:	BUILDING NUMBER / CHECKED / DRAWN	PROJECT NO.: 01275.007	
APPROVED:	LOCATION	DRAWING NO.: IAQ 1 DWG. 1 OF 5	



PLAZA LEVEL FLOOR PLAN
NOT TO SCALE

LEGEND

- IAQ Sample Location
- M07 — Mold Sample Location

Bi-Weekly IAQ Survey

Round 3 of 6
November 30, 2021

2 SPRINGFIELD HOJ
FIRST FLOOR PLAN

PLAN NOT FOR CONSTRUCTION

REVISIONS | DATE

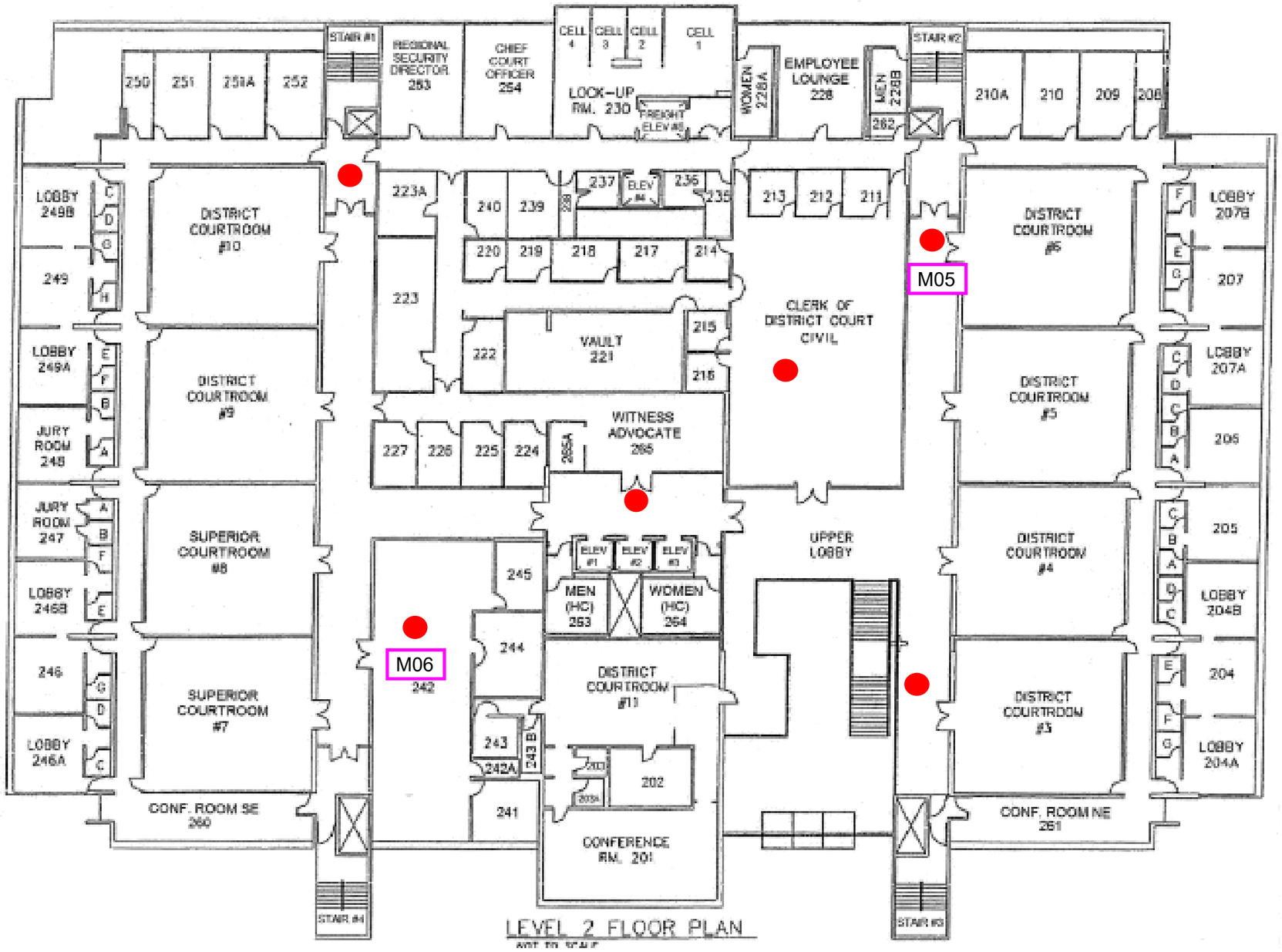
NORTH

50 State Street, Springfield MA

AXIOM PARTNERS, INC.
50 B Salem St., Suite 103
LynnField, MA 01940
(781) 213-9198
www.axiomenv.com

DRAWING TITLE: Springfield HOJ First Floor Plan
PROJECT TITLE: SHOJ IAQ Survey 50 State St, Springfield MA
DATE: 11/30/21
PROJECT NO.: 01275.007
APPROVED:
BUILDING NUMBER | CHECKED | DRAWN
APPROVED:
LOCATION
DRAWING NO.: IAQ 2
DWG. 2 OF 5

axiom PARTNERS environmental engineers



LEVEL 2 FLOOR PLAN

LEGEND

- IAQ Sample Location
- M05 — Mold Sample Location

Bi-Weekly IAQ Survey

Round 3 of 6
November 30, 2021

3 SPRINGFIELD HOJ
SECOND FLOOR PLAN

PLAN NOT FOR CONSTRUCTION

REVISIONS | DATE

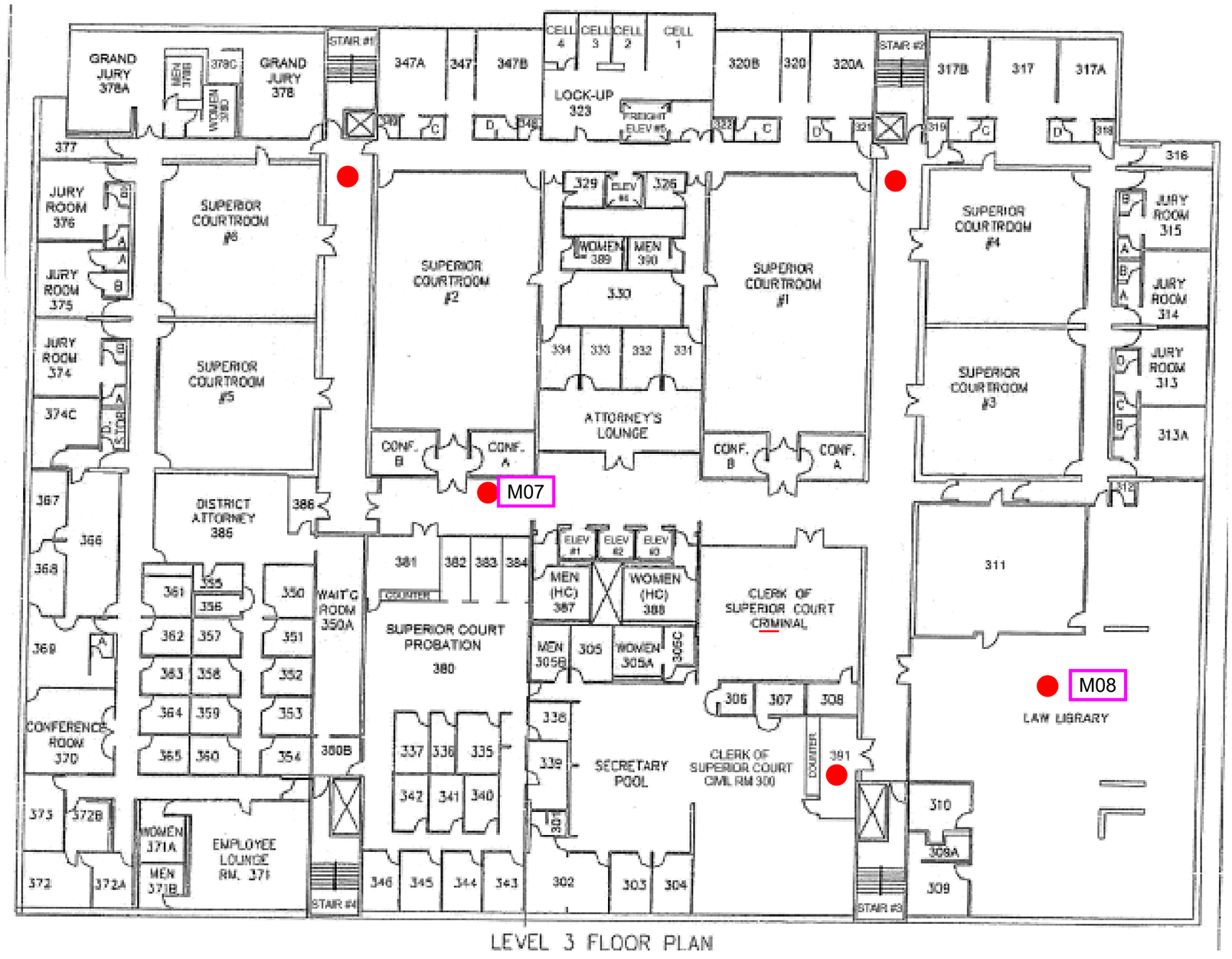
NORTH

50 State Street, Springfield MA

AXIOM PARTNERS, INC.
50 B Salem St., Suite 103
LynnField, MA 01940
(781) 213-9198
www.axiomenv.com

DRAWING TITLE: Springfield HOJ Second Floor Plan
PROJECT TITLE: SHOJ IAQ Survey 50 State St, Springfield MA
DATE: 11/30/21
PROJECT NO.: 01275.007
APPROVED:
BUILDING NUMBER
CHECKED
DRAWN
APPROVED:
LOCATION
DRAWING NO.: IAQ 3
DWG. 3 OF 5

axiom PARTNERS environmental engineers



LEVEL 3 FLOOR PLAN

LEGEND

- IAQ Sample Location
- M03 — Mold Sample Location

Bi-Weekly IAQ Survey

Round 3 of 6
November 30, 2021

4 SPRINGFIELD HOJ
THIRD FLOOR PLAN

PLAN NOT FOR CONSTRUCTION

REVISIONS | DATE

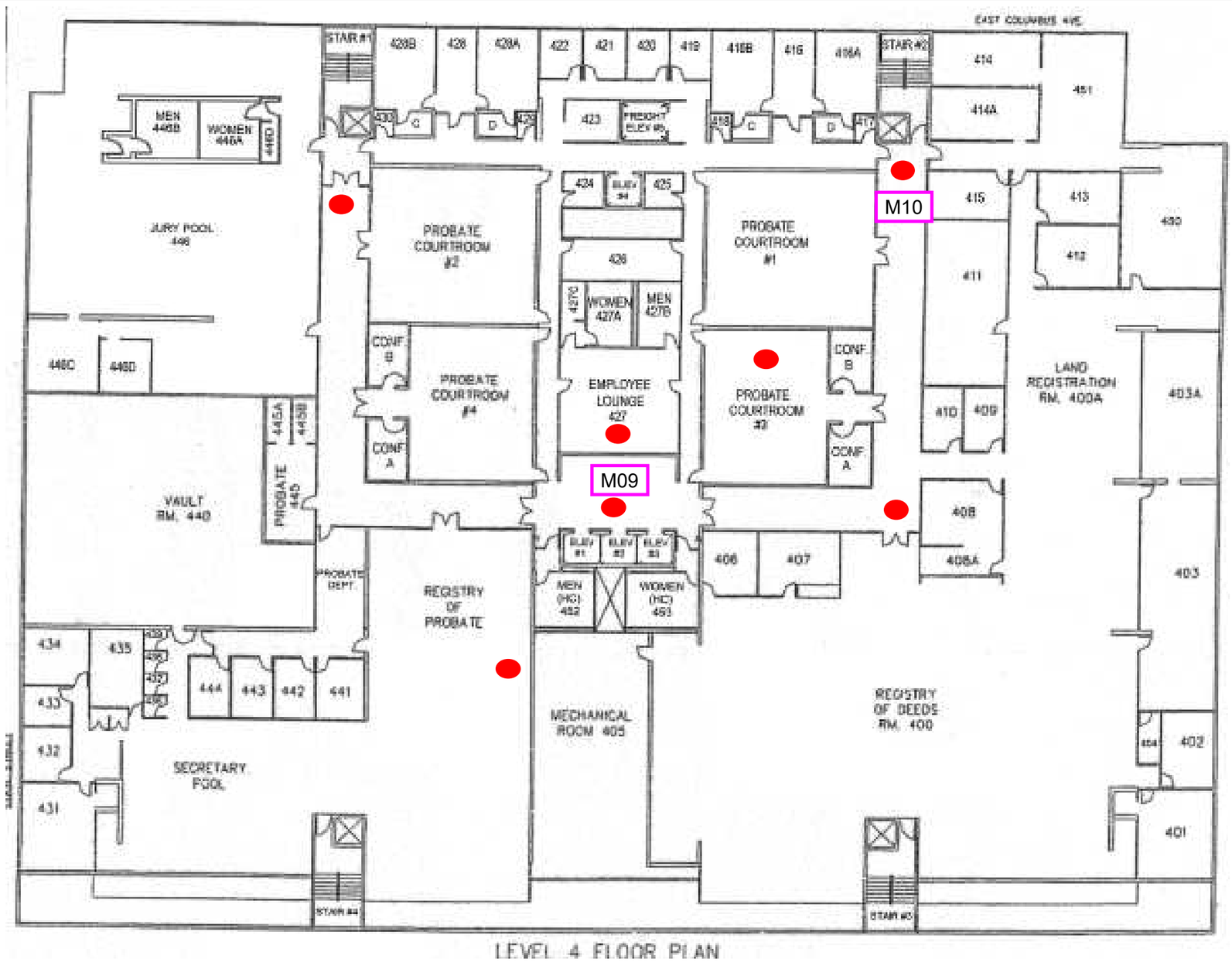
NORTH

50 State Street, Springfield MA

AXIOM PARTNERS, INC.
50 B Salem St., Suite 103
LynnField, MA 01940
(781) 213-9198
www.axiomenv.com

DRAWING TITLE: Springfield HOJ Third Floor Plan	PROJECT TITLE: SHOJ IAQ Survey 50 State St, Springfield MA	DATE: 11/30/21	
APPROVED:	BUILDING NUMBER	CHECKED	DRAWN
APPROVED:	LOCATION	PROJECT NO.: 01275.007	
		DRAWING NO.: IAQ 4	DWG. 4 OF 5

axiom PARTNERS environmental engineers



LEVEL 4 FLOOR PLAN

LEGEND

- IAQ Sample Location
- M01 — Mold Sample Location

Bi-Weekly IAQ Survey

Round 3 of 6
November 30, 2021

5 SPRINGFIELD HOJ
FOURTH FLOOR PLAN

PLAN NOT FOR CONSTRUCTION

REVISIONS | DATE

NORTH

50 State Street, Springfield MA

AXIOM PARTNERS, INC.
50 B Salem St., Suite 103
LynnField, MA 01940
(781) 213-9198
www.axiomenv.com

DRAWING TITLE: Springfield HOJ Fourth Floor Plan
PROJECT TITLE: SHOJ IAQ Survey 50 State St, Springfield MA
APPROVED:
BUILDING NUMBER | CHECKED | DRAWN
APPROVED:
LOCATION
DATE: 11/30/21
PROJECT NO.: 01275.007
DRAWING NO.: IAQ 5
DWG. 5 OF 5

axiom PARTNERS environmental engineers

ATTACHMENT 5

TVOC CONCENTRATION REFERENCE TABLE

TVOC Indoor Air Concentration Reference Guide

TVOC Level *ug*/m3	Level of Concern	Symptoms	Comments
<300 (0.3 ppm)	Low	No irritation or discomfort is expected	There is a low likelihood that specific VOC sources are present
300 to 500 (0.3 to 0.5 ppm)	Acceptable	Occasional irritation or discomfort may be possible with sensitive individuals	There is a low to moderate likelihood that specific VOC sources are present
500 to 1,000 (0.5 to 1.0 ppm)	Marginal	Complaints about irritation and discomfort are possible in sensitive individuals	A moderate likelihood that specific VOC sources are it is recommended that steps be taken to identify the sources
1,000 to 3,000 (1.0 to 3.0 ppm)	High	Irritation and discomfort are very likely	A high likelihood that specific VOC sources are present and it is highly recommended that steps be taken to identify them
>3,000 (>3.0 ppm)	Very High	Irritation and discomfort are very possible	These levels are usually found in an industrial environment where workers are exposed to chemicals