MISSISSIPPI ASBESTOS DEMOLITION/RENOVATION NOTIFICATION FORM

Mail notification to: MDEQ Asbestos and Lead Branch, 515 E. Amite Street, Jackson, MS 39201

MDEQ Use Only: X Email ☐Mail ☐Hand Delivery	Postmark (mail only)	Date Received 10-24-2024	AI Number

I. Type of Notification (O=Original R=Revised C=Canceled A= Annual): O

II. TYPE OF OPERATION (D=Demo O= Ordered Demo R=Renovation E=Emer. Renovation): ~~D~~ R

III. FACILITY DESCRIPTION (Include building name, number and floor or room number):

Bldg. Name: Thalia Mara Hall

Address: 255 E. Pascagoula Ave.

City: Jackson | State: MS | Zip: ~~39217~~ 39201

Site Location: Auditorium-see attachment | Tel: 601-316-6213

Building Size: 50,000 sq. ft. | # of Floors: 3 | Age in Years: 57

Present Use: Auditorium | Prior Use: Auditorium

IV. FACILITY INFORMATION (Identify owner, asbestos removal contractor, and other operator)

OWNER NAME: City of Jackson

Address: 219 S. President Street

City: Jackson | State: MS | Zip: 39201

Contact: Abdelhakeem Ali | Tel: 601-316-6213

ASBESTOS REMOVAL CONTRACTOR: Guarantee Environmental Services, LLC

Address: 16248 Perkins Road | ABC-00011409 07/18/2025

City: Baton Rouge | State: LA | Zip: 70810

Contact: Shannon Rivett/Carl Sterling | Tel: 225-931-4860

Certification Number: ABS-0001129 | Expiration Date: 01/26/25

OTHER OPERATOR:

Address:

City: | State: | Zip:

Contact: | Tel:

V. WAS SITE INSPECTED TO DETERMINE PRESENCE OF ASBESTOS? (Yes/No): yes

WAS ASBESTOS PRESENT? (Yes/No): yes | Inspection Date: 9/19/24

Inspector: Charles Cook | Certification Number: ABI-0000520 | Expiration Date: 02/23/25

VI. SUSPECT MATERIALS SAMPLED AND PROCEDURES USED TO DETECT THE PRESENCE OF ASBESTOS MATERIAL:

Building is over 50 years old when asbestos was present in the fireproofing & piping materials being removed. Therefore it is assumed asbestos is present. Please see report

VII. QUANTITY OF RACM TO BE REMOVED: Fireproofing and Piping

Pipes (LN FT): 100 | Surface Area (SQ FT): 1000 | Volume of Facility Components (CU FT):

VIII. QUANTITY OF ~~NON~~-FRIABLE ASBESTOS NOT REMOVED: Fireproofing all will be encapsulated

Category I: | Category II:

IX. SCHEDULED DATES ASBESTOS REMOVAL (MM/DD/YY) Start: 11/11/24 | Complete: 11/22/24

X. SCHEDULED DATES DEMO/RENOVATION (MM/DD/YY) Start: 11/25/24 | Complete: 12/27/24

XI. DESCRIPTION OF PLANNED DEMOLITION OR RENOVATION WORK, AND METHOD(S) TO BE USED: Only a portion of the asbestos is being removed, the rest will be encapsulating and stay in tact. The areas where fireproofing & piping is already falling off will be removed

XII. DESCRIPTION OF WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO PREVENT EMISSIONS OF ASBESTOS AT THE DEMOLITION OR RENOVATION SITE: Double bag asbestos, wet methods, environmental controls utilizing HEPA filtered air scrubbers and mobili ad containment. Utilize wet removal techniques to keep materials wet so no airborne release

XIII. WASTE TRANSPORTER #1

Name: Republic Services

Address: 1035 Old Brandon Road

City: Flowood | State: MS | Zip: 39232

Contact Person: Scott Johnson | Tel: 601-906-4606

WASTE TRANSPORTER #2

Name:

Address:

City: | State: | Zip:

Contact Person: | Tel:

XIV. WASTE DISPOSAL SITE

Name: Little Dixie Landfill

Address: 1716 North County Line

City: Ridgeland | State: MS | Zip: 39157

Contact Person: Mike Raley | Tel: 601-613-8671

XV. IF DEMOLITION ORDERED BY A GOVERNMENT AGENCY, PLEASE IDENTIFY THE AGENCY BELOW:

Name: | Title:

Authority:

Date of Order (MM/DD/YY): | Date Ordered to Begin (MM/DD/YY):

XVI. FOR EMERGENCY RENOVATIONS:

Date and Hour of Emergency (MM/DD/YY):

Description of the sudden unexpected event:

Explanation of how the event caused unsafe conditions or would cause equipment damage or an unreasonable financial burden:

XVII. DESCRIPTION OF PROCEDURES TO BE FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IS FOUND OR PREVIOUSLY NONFRIABLE ASTESTOS MATERIAL BECOMES CRUMBLED, PULVERIZED, OR REDUCED TO POWDER:

Stop Work, verify suspect material is RACM, obtain additional permits if necessary

XVIII. I CERTIFY THAT AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THIS REGULATION (40 CFR PART 61, SUBPART M) WILL BE ONSITE DURING THE DEMOLITION OR RENOVATION, AND EVIDENCE THAT THE REQUIRED TRAINING HAS BEEN ACCOMPLISHED BY THIS PERSON WILL BE AVAILABLE FOR INSPECTION DURING NORMAL BUSINESS HOURS.

Shannon Rivett (Type or Print Name) | Shannon Rivett (Signature of Owner/Operator) | 10/24/24 (Date)

XIX. I CERTIFY THAT THE ABOVE INFORMATION IS CORRECT:

Shannon Rivett (Type or Print Name) | Shannon Rivett (Signature of Owner/Operator) | 10/24/24 (Date)

CTEH®

October 23, 2024

City of Jackson, Mississippi
Thalia Mara Hall
255 E Pascagoula St
Jackson, Mississippi 39201

Re: Addendum to scope pursuant to asbestos testing of material in facility

Emad Al-Turk,

This letter is intended to summarize the work conducted by the CTEH®, LLC (CTEH) in response to the City of Jackson request to provide a comprehensive scope of work support for the remediation of Thalia Mara Hall. CTEH® developed and implemented a fungal and asbestos sampling and analysis plan to assess suspected asbestos containing materials (ACM) discovered in previously survey areas of the facility.

On October 4, 2024 CTEH pursued testing for suspected ACM found in the Thalia Mara Hall structure. It was previously assessed that the materials coating the structural beams above the main auditorium seating, the uppermost ceiling in the main auditorium hall, the upward facing surfaces of the acoustical tiles above the main auditorium seating, the cross beams lining the northeast, east, west, and south walls above the main stage, and the green room ceiling all were previously tested for asbestos. All these materials were found to contain asbestos.

It was suspected that the materials found on the carpet near the west wall on the second-floor auditorium seating stairs and the materials found directly under the cross beams lining the stage (right) walls could be the same ACM. Additionally, materials from crumbling plaster in the mechanical room housing AHU 1-4, materials from loose pipe insulation, and pipe joint materials from the below stage storage area were also sampled for ACM. Paint materials from the acoustical tiles and peeling paint from one of the office spaces in the office/storage room in the southeast room in the ground floor lobby area were also sampled for the presence of lead. Results for lead and asbestos can be located in Appendix A.

The materials found on the carpet were visually consistent previously sampled materials from the fireproof coatings sampled from the above seating ceiling beams. Lab results indicated they ACM. The materials sampled from below the cross beams on the main theater stage were visually consisted with the ACM coating the beams. The lab results for these sampled materials were "positive stop". Lab results can be found in appendix A.

Addendum to Proposed Scope of Work:

Our primary objective going forward is the health and safety of everyone conducting work in the Thalia Mara Hall structure. The most recent laboratory results indicate that additional measures should be employed to prevent falling ACM from further contaminating additional surfaces, cross contaminating indoor atmospheres, and HVAC systems.

1. The above acoustical plane region directly above the main auditorium seating will now be designated for asbestos containment and abatement. Materials considered for abatement are the already loosed and scattered materials on the surfaces of the catwalk, HVAC, handrails, fixtures, walking planks, and any upward facing surface above the acoustical plane that shares the same atmosphere as ACM that have dislodged from structural beams and the coated ceiling. This containment should include an airtight seal extending from the top surface of the acoustical tiles to all four walls and the ceiling. This area should remain under negative pressure during all remediation of falling materials and cleaning of exposed surfaces. It is now paramount that no materials which have already fallen from the fireproof coatings above migrate to the below auditorium. Access to this catwalk structure should be limited until at least one level of containment to separate this environment from the below seating environment is constructed. A decontamination area should be constructed for this area of containment. Because of the limited space on the metal catwalk structure, it is proposed that this decontamination area be constructed on the last flat landing next to the spiral staircase access before reaching the above acoustical plane. This area could also provide staging for equipment. Containment will have to occur prior to encapsulation to prevent materials from being dislodged and escaping to below atmospheres.
2. Containment areas should be constructed for the walls occupied by cross beams with sprayed on coatings with ACM. This contained area should include the atmosphere occupied by the cross beams and the space on the floor directly below where beam coating materials have fallen. Materials which have dislodged and fallen to the stage surface must be removed. It is recommended that materials on the cross beams be encapsulated. Wrapping the ACM with an industry approved encapsulate material is preferred over a spray coating. It is hypothesized that spraying these materials could inadvertently dislodge more ACM.
3. The carpet on the second-floor balcony seating area, along the west wall stairs (stage left) should be contained for ACM. The carpet is now recommended for abatement. The approximate abatement square footage of this area is ~650ft^2, including ~350ft^2 of carpet materials. The materials appear to be mostly intact in granular form on the carpet surface. Containment and negative pressure are recommended to prevent cross contamination to the rest of the auditorium.
4. Additional sampling was performed in the mechanical room housing AHU's 1-4. The skim coat and mortar material below were found falling to the ground directly next to the partially enclosed fresh air HVAC ductwork. This material tested negative for ACM and requires no asbestos abatement.
5. There is one vertical pipe in the below stage storage area along the west wall that was sampled. The insulator fiber material tested negative. The associated joint material tested positive and is falling to the ground. This material necessitates containment and removal before mold remediation strategies can begin. This represents a very small area in this room and material of

concern is no more than 10 ft^2, to include insulation wrapping that has been exposed to pipe joint ACM.

6. Adjoining the stage is the Green Room. The ceiling of the Green Room was previously sampled and found to be positive for ACM. However, these ceiling materials are not falling and at this juncture there is no intention of removing or disturbing these materials. Encapsulation and containment are recommended for the ceiling materials at this point. It is also recommended that further spot testing of the structural integrity of these materials be performed to ensure that they are suitable for encapsulation (patch test). Strategies for remediation in this area require further discussion and may represent a possible change order outside the scope of this addendum if it is deemed necessary to completely abate the materials.
7. Several of the acoustical tiles above the main auditorium will need to be remediated for lead. From ground visuals, and evidence of peeling paint on the floor directly below, there are at least 3 of these tiles which will need to be mitigated for the presence of lead paint. Because of the logistics involved in reaching suspect surfaces, a more thorough investigation will need to be executed after scaffolding is erected. It is recommended at this point that all acoustical downward facing surfaces be encapsulated after the abatement of loose and falling materials. Loosed paint materials should be removed in accordance with promulgated EPA/HUD standards. An encapsulant patch test should be performed prior to encapsulating remain portions of adhered paint.

Addendum to Scope for HVAC Cleaning

1. The below structure main damaged return is recommended for cleaning and encapsulation with a contingency for removal and replacement of damaged areas. Replacement of damaged areas is recommended if HVAC contractor determines repair does not return the system to operational and air quality standards.

Addendum to scope for cultural preservation items

1. The painting at the entrance of the first-floor lobby should be handled with care. A cultural preservation assessment can provide contractors with insight on proper handling.

Respectfully,

Christopher Flood
Consultant II
CTEH, LLC

Photo 1

ACM found on carpet in the main auditorium. Suspected source is the beams above where suspected efflourescence is occuring from moisture intrusion

Photo 2

Effluorescence on fire proof coating ACM on beams above the main auditorium

Photo 3

Main Auditorium frie proof coating exhibiting effluorescence and possibly acting a point source for falling materials

Photo 4

Borescope image of structurally diminished ACM from the fire proof coating effluorescence on the ceiling beams in the main auditorium

Photo 5

ACM faling from cross beams in stage area

Photo 6

ACM falling from cross beam materials in stage area

Photo 7

ACM on second floor balcony carpet

Photo 8

ACM on second floor balcony carpet

Appendix A

Laboratory Reports

EMSL Analytical, inc.
18380 Petroleum Drive Baton Rouge, LA 70809
Tel/Fax: (225) 755-1920 / (225) 755-1989
http://www.EMSL.com / batonrougelab@emsl.com

EMSL Order: 252404436
Customer ID: FCAE34
Customer PO:
Project ID:

Attention: Charles Cook
FC & E
PO Box 1774
Brandon, MS 39047

Project: CTEH- Thalia Mara Hall

Phone: (601) 824-1880
Fax:
Received Date: 10/07/2024 9:45 AM
Analysis Date: 10/07/2024
Collected Date: 10/04/2024

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Type
01 252404436-0001	LRJ Starts - White Material	White Fibrous Homogeneous		25% Non-fibrous (Other)	75% Chrysotile
02 252404436-0002	Stage - White Material				Positive Stop (Not Analyzed)
03 252404436-0003	Stage - White Material				Positive Stop (Not Analyzed)
04 252404436-0004	LRE Stairs - White Material				Positive Stop (Not Analyzed)
05 252404436-0005	Mechanical Room - Plaster	Tan Non-Fibrous Homogeneous	HA: HA2	100% Non-fibrous (Other)	None Detected
06 252404436-0006	Mechanical Room - Plaster	Tan Non-Fibrous Homogeneous	HA: HA2	100% Non-fibrous (Other)	None Detected
07 252404436-0007	Mechanical Room - Plaster	Tan Non-Fibrous Homogeneous	HA: HA2	100% Non-fibrous (Other)	None Detected
08-Skim Coat 252404436-0008	Mechanical Room - Plaster	White Non-Fibrous Homogeneous	HA: HA3	100% Non-fibrous (Other)	None Detected
08-Plaster 252404436-0008A	Mechanical Room - Plaster	Tan Non-Fibrous Homogeneous	HA: HA3	100% Non-fibrous (Other)	None Detected
09-Skim Coat 252404436-0009	Mechanical Room - Plaster Surface	White Non-Fibrous Homogeneous	HA: HA3	100% Non-fibrous (Other)	None Detected
09-Plaster 252404436-0009A	Mechanical Room - Plaster Surface	Tan Non-Fibrous Homogeneous	HA: HA3	100% Non-fibrous (Other)	None Detected
10-Skim Coat 252404436-0010	Mechanical Room - Plaster Surface	White Non-Fibrous Homogeneous	HA: HA3	100% Non-fibrous (Other)	None Detected
10-Plaster 252404436-0010A	Mechanical Room - Plaster Surface	Tan Non-Fibrous Homogeneous	HA: HA3	100% Non-fibrous (Other)	None Detected

Initial report from: 10/08/2024 10:04:58

EMSL Analytical, Inc.
18368 Petroleum Drive Baton Rouge, LA 70809
Tel/Fax: (225) 755-1920 / (225) 755-1989
http://www.EMSL.com / batonrougelab@emsl.com

EMSL Order:	252404436
Customer ID:	FCAE34
Customer PO:	
Project ID:	

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
11 252404436-0011	Pipe Elbow Insulation 2"	Tan Fibrous Homogeneous	15% Glass NA: NA6	65% Non-fibrous (Other)	20% Amosite
12 252404436-0012	Pipe Elbow Insulation 2"		NA: NA6		Positive Stop (Not Analyzed)
13-Insulation 252404436-0013	Pipe Insulation and wrap	Yellow Fibrous Homogeneous	98% Glass NA: NA5	2% Non-fibrous (Other)	None Detected
13-Wrap 252404436-0013A	Pipe Insulation and wrap	White/Silver Fibrous Homogeneous	15% Glass NA: NA5	85% Non-fibrous (Other)	None Detected
14-Insulation 252404436-0014	Pipe Insulation and wrap	Yellow Fibrous Homogeneous	98% Glass NA: NA5	2% Non-fibrous (Other)	None Detected
14-Wrap 252404436-0014A	Pipe Insulation and wrap	White/Silver Fibrous Homogeneous	15% Glass NA: NA5	85% Non-fibrous (Other)	None Detected

Analyst(s)
Bailey Gumer (15)

Mariana Beach, Laboratory Manager
or Other Approved Signatory

Initial report from: 10/08/2024 10:04:58

EMSL Analytical, Inc.

18349 Petroleum Drive, Baton Rouge, LA, 70809
Telephone: (225)-755-1928 Fax:(225)-755-1989
EMSL-BR-25

EMSL Order ID: 252450596
LIMS Reference ID: PC50596
EMSL Customer ID: FCAE34

Attention: Charles Cook
FC & E [FCAE34]
PO Box 1774
Brandon, MS 39047
(601) 824-1860
ccook@fce-engineering.com

Project Name: CTEH - Thalia Mara Hall
Customer PO:
EMSL Sales Rep: David Prince
Received: 10/07/2024 09:45
Reported: 10/08/2024 11:54

Analytical Results

Analyte	Results	RL	Weight(g)	Prep Date & Tech	Prep Method	Analysis Date & Analyst	Analytical Method	Q	DF
Client Sample ID: L1/Acoustic Tile Paint M4									Date Sampled: 10/04/24
Matrix: Chips									LIMS Reference ID: PC50596-01
Lead	1.1 % wt	0.040 % wt	0.2511	10/08/24 KN	SW-846 3050B	10/08/24 KN	SW 846-7000B	D	5
Sample Comments:									
Client Sample ID: L2/Acoustic Tile Paint M4									Date Sampled: 10/04/24
Matrix: Chips									LIMS Reference ID: PC50596-02
Lead	1.3 % wt	0.040 % wt	0.251	10/08/24 KN	SW-846 3050B	10/08/24 KN	SW 846-7000B	D	5
Sample Comments:									
Client Sample ID: L3/Paint on Duct Work									Date Sampled: 10/04/24
Matrix: Chips									LIMS Reference ID: PC50596-03
Lead	0.027 % wt	0.008 % wt	0.2504	10/08/24 KN	SW-846 3050B	10/08/24 KN	SW 846-7000B		1
Sample Comments:									
Client Sample ID: L4/Paint on Duct Work									Date Sampled: 10/04/24
Matrix: Chips									LIMS Reference ID: PC50596-04
Lead	0.031 % wt	0.008 % wt	0.2563	10/08/24 KN	SW-846 3050B	10/08/24 KN	SW 846-7000B		1
Sample Comments:									

EMSL Analytical, Inc.

18389 Petroleum Drive, Baton Rouge, LA, 70809
Telephone: (225)-755-1920 Fax:(225)-755-1989
EMSL-BR-25

EMSL Order ID: 252450596
LIMS Reference ID: PC50596
EMSL Customer ID: FCAE34

Attention: Charles Cook
FC & E [FCAE34]
PO Box 1774
Brandon, MS 39047
(601) 824-1860
ccook@fce-engineering.com

Project Name: CTEH - Thalia Mara Hall
Customer PO:
EMSL Sales Rep: David Prince
Received: 10/07/2024 09:45
Reported: 10/08/2024 11:54

Certified Analyses included in this Report

Analyte	Certifications
SW 846-7000B in Chips	
Lead	25-A2LA Lead and Micro,25-LA (LELAP)

List of Certifications

Code	Description	Number	Expires
25-LA (LELAP)	Lead, Fungi, PCM, TEM, PLM	01950	06/30/2025
25-A2LA Lead and Micro	A2LA for Environmental Lead and Micro	2845.03	03/31/2025

Please see the specific Field of Testing (FOT) on www.emsl.com <http://www.emsl.com> for a complete listing of parameters for which EMSL is certified.

Notes and Definitions

Item	Definition
D	Analyte was reported from a dilution run.
(Dig)	For metals analysis, sample was digested.
[2C]	Reported from the second channel in dual column analysis.
DF	Dilution Factor
MDL	Method Detection Limit.
ND	Analyte was NOT DETECTED at or above the detection limit.
NR	Spike/Surrogate showed no recovery.
Q	Qualifier
RL	Reporting Limit
Wet	Sample is not dry weight corrected.

Measurement of uncertainty and any applicable definitions of method modifications are available upon request. Per EPA NLLAP policy, sample results are not blank corrected.

EMSL Analytical, Inc.

18369 Petroleum Drive, Baton Rouge, LA, 70809
Telephone: (225)-755-1920 Fax:(225)-755-1989
EMSL-BR-25

EMSL Order ID: 252450596
LIMS Reference ID: PCS0596
EMSL Customer ID: FCAE34

Attention: Charles Cook
FC & E [FCAE34]
PO Box 1774
Brandon, MS 39047
(601) 824-1860
ccook@fce-engineering.com

Project Name: CTEH - Thalia Mara Hall

Customer PO:
EMSL Sales Rep: David Prince
Received: 10/07/2024 09:45
Reported: 10/08/2024 11:54

Martiana Beach Laboratory Manager or other approved signatory

Analysis following EMSL SOP for the Determination of Environmental Lead by PLM. The laboratory has a reporting limit of 0.009% by wt., based upon a minimum sample weight of 0.25g submitted to the lab, and is not responsible for any result or reporting limit provided in mg/cm2 since it is dependent upon an area value provided by non-lab personnel. A "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty and definitions of modifications are available upon request. Results in this report are not blank corrected unless specified.

OrderID: 252404204

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number (Lab Use Only): 4204

EMSL ANALYTICAL, INC.
18369 PETROLEUM DRIVE
BATON ROUGE, LA, 70809
PHONE: (225) 755-1920
FAX: (225) 755-1989

Company : FC&E Engineering, LLC	EMSL-Bill to: ☒ Same ☐ Different If Bill to Is Different note Instructions In Comments" *Third Party Billing requires written authorization from third party*
Street: 917 Marquette Road	
City: Brandon / State/Province: MS	Zip/Postal Code: 39042 / Country: US
Report To (Name): Charles Cook	Fax #: 601-824-9627
Telephone #: 601-824-1860	Email Address: ccook@fce-engineering.com
Project Name/Number: [illegible] CTEH- Thaling Mera Hall	
Please Provide Results: ☐ Fax ☒ Email / Purchase Order:	U.S. State Samples Taken: MS

Turnaround Time (TAT) Options* – Please Check

☒ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

*For TEM Air 3 hr through 6 hr, please call ahead to schedule. *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

PCM - Air
- ☐ NIOSH 7400
- ☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
- ☒ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)

Point Count
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)

Point Count w/Gravimetric
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
- ☐ NYS 198.1 (friable in NY)
- ☐ NYS 198.6 NOB (non-friable-NY)
- ☐ NIOSH 9002 (<1%)

TEM – Air ☐ 4-4.5hr TAT (AHERA only)
- ☐ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312

TEM - Bulk
- ☐ TEM EPA NOB
- ☐ NYS NOB 198.4 (non-friable-NY)
- ☐ Chatfield SOP
- ☐ TEM Mass Analysis-EPA 600 sec. 2.5

TEM – Water: EPA 100.2
- Fibers >10µm ☐ Waste ☐ Drinking
- All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Dust
- ☐ Microvac - ASTM D 5755
- ☐ Wipe - ASTM D6480
- ☐ Carpet Sonication (EPA 600/J-93/167)

Soil/Rock/Vermiculite
- ☐ PLM CARB 435 - A (0.25% sensitivity)
- ☐ PLM CARB 435 - B (0.1% sensitivity)
- ☐ TEM CARB 435 - B (0.1% sensitivity)
- ☐ TEM CARB 435 - C (0.01% sensitivity)
- ☐ EPA Protocol (Semi-Quantitative)
- ☐ EPA Protocol (Quantitative)

Other:
- ☐

☐ **Check For Positive Stop – Clearly Identify Homogenous Group**

Samplers Name: Charles Cook **Samplers Signature:**

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
01	Beam Fireproofing		9/19/24
02	Beam Fireproofing		
03	Acoustic Tile		
04	Beam Fireproofing		
05	Acoustic Tile		
06	Acoustic Tile		
07	Spray On Surfacing		
08	Spray On Surfacing		

Client Sample # (s): 01 - 15 **Total # of Samples:** 15

Relinquished (Client): [signature] **Date:** 9/19/24 **Time:** 12:00

Received (Lab): [signature] **Date:** 9/20/24 **Time:** 8:30AM

Comments/Special Instructions:

(R) 1796 2249 4365
1 of 1

OrderID: 252404204

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number *(Lab Use Only)*: 4204

EMSL ANALYTICAL, INC.
11931 INDUSTRIPLEX BLVD.
BATON ROUGE, LA, 70809
PHONE: (225) 755-1920
FAX: (225) 755-1989

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
09	Spray On Surfacing		9/19/24
10	Ceiling Tile Basement		
11	↓ ↓ ↓		
12			
13	Spray On surfacing Green room		
14	↓ ↓ ↓		
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			

***Comments/Special Instructions:**

3 hr TAT

State of Mississippi

Department of Environmental Quality
Office of Pollution Control

Certificate of Licensure

In accordance with the Asbestos Abatement Accreditation and Certification Act,
Enacted as 1989 Mississippi Law, Chapter 505

Be it known that

Charles Cook

Having submitted acceptable evidence of qualifications and
training and other appropriate information, is hereby granted this

Asbestos Inspector

Certification

Chief, Asbestos & Lead Branch

Certificate No.: ABI-00005120
Expiration Date: Feb 23rd, 2025
Training Expires on Feb 23rd, 2025

58520 LIC20240001

State of Mississippi

Department of Environmental Quality

Office of Pollution Control

Certificate of Licensure

In accordance with the Asbestos Abatement Accreditation and Certification Act,
Enacted as 1989 Mississippi Law, Chapter 505

Be it known that

William S Folks

Having submitted acceptable evidence of qualifications and
training and other appropriate information, is hereby granted this

Asbestos Contractor

Certification

Chief, Asbestos & Lead Branch

Certificate No.: ABC-00011409
Expiration Date: Jul 18th, 2025
Training Expires on Jul 18th, 2025

78645 LIC20240001

State of Mississippi

Department of Environmental Quality
Office of Pollution Control

Certificate of Licensure

In accordance with the Asbestos Abatement Accreditation and Certification Act,
Enacted as 1989 Mississippi Law, Chapter 505

Be it known that

Carl Sterling

Having submitted acceptable evidence of qualifications and
training and other appropriate information, is hereby granted this

Asbestos Supervisor

Certification

Chief, Asbestos & Lead Branch

Certificate No.: ABS-00011129
Expiration Date: Jan 26th, 2025
Training Expires on Jan 26th, 2025

80521 LIC20240002

CTEH®

THALIA MARA HALL

ADDENDUM

Jackson, Mississippi

Thalia Marah Hall IAQ

08/19/2024

Project #044882

During the second site assessment and walk through (08/19/2024) of the Thaliah Marah Hall Theater, Jackson, Mississippi, the following observations were made:

1. The roof access hatches both in the lighting room (north top floor) and just above the spiral staircase accessing the mezzanine area above the main viewing hall (east), were both unsealed. They appeared to either be missing gaskets or mechanically ajar, preventing sealing and allowing for possible moisture ingress into the facility.

2. There was the visual presence of a roof leak on the west-northwest side of the structure, observed from the mezzanine. The leak was causing discoloration and crumbling of presumed ceiling insulation. Crumbling materials can be seen on the stairs of the second floor along west wall middle of seating rows. This can be another source of humidity and water ingress.

3. Detailed inspection and review of the HVAC systems revealed considerable accumulation of dirt, dust, and debris. Access to return cavities on the main floor (viewing hall) will be difficult due to width of access panels. HVAC system supplying ground floor lobby (heavily impacted with microbial activity) was not functioning. Return air was passively feeding environment with warm air and complicating the moisture balance in the immediate environment.

4. Further inspection of the HVAC systems revealed a crudely cut and unsealed access panel in the main return duct (beneath main structure) below the main auditorium hall. This duct work exhibited signs of possible previously flooding. There were water stains along the duct work, which were located in lowest point beneath the main structure.

5. It is recommended that air scrubbers be placed ~ every 2,000 ft^2 during cleaning procedures to prevent cross contamination of aerosolized spores during mechanical cleaning procedures.

Addendum to scope of work

1. The ground floor lobby area should be sealed during remediation efforts to prevent further contamination of spores throughout the structure. HVAC cleaning should be done in the presence of air scrubbers to prevent additional spore release throughout the structure during cleaning efforts. The two prominently affected wooden doors should be removed and cleaned by damp wiping with mild detergent, wiping with fungicidal solution, then by HEPA vacuuming. All six surfaces of the wooden doors should be clean. Hardware on doors should be cleaned in the same manner due to the extent of the microbial colonization. If cleaning is inadequate to remove growth, or if growth has significantly penetrated wooden surface, then doors should be replaced. The two areas of dematiaceous (black) growth on the specified synthetic baseboards should require mild scrubbing (soft brush) with mild detergent in addition to damp wiping and application of fungicidal solution. Putatively these organisms could produce more exopolysaccharides, making removal more difficult. The remaining lobby area should be cleaned by HEPA vacuuming, damp wiping with mild detergent and fungicidal solution, then HEPA vacuumed again.
2. HEPA vacuuming of ceiling tiles and hard surfaces.
3. Carpets should be cleaned by steam extraction then HEPA vacuumed.
4. Walls should be damp wiped with mild detergent and fungicidal solution.
5. Handrails, wooden half walls and trim, doorknobs and door facings, non-porous furniture (couches and chairs), and seating armrests should be wiped with mild detergent and fungicidal solution.
6. Ceiling tiles stained with water should be removed, bagged in polypropylene, removed and discarded. Ceiling tiles exhibiting microbial growth should be removed and discarded prior to cleaning the rest of the environment.
7. The rest of the structures on ground floor, second and third floor lobbies, adjoining hallways and escalators can be cleaned by placing air scrubbers ~ every 2,000 ft^2, and by damp wiping with mild detergent and fungicidal solution. Carpets on these floors can be steam extracted then HEPA vacuumed post remediation efforts.

Parameters for cleaning in the main auditorium hall include the air space from the HVAC supply on the ceiling tiles above seating area to floor. Supply vents should be removed and cleaned by damp wiping with mild detergent and fungicidal solution. Acoustical tile surfaces (downward facing) should be cleaned by damp wiping with mild detergent and fungicidal solution. No cleaning for microbial growth is recommended above the acoustical ceiling tile plane. There were no visual signs of microbial biofilm on labile materials above this plane (08/19/24). Soft seat materials should be cleaned by steam extraction and then damp wiped with mild detergent and fungicidal solution. Conditions should be conducive to adequate drying of these soft materials immediately after cleaning. Synthetic fabrics on seats should be HEPA vacuumed after drying. I would also recommend this process of chair cleaning occur post disinfection/cleaning of systems used to extract carpet materials so that there is no cross contamination of microbial materials. Hard plastic and wood seat materials should be damp wiped with mild detergent and fungicidal solution. It is recommended as per the original scope, that the carpeting in first seating area closest to stage be removed and replaced. This is the carpet from the stage to the first set of steps leading to the first flat landing moving north in the auditorium. The hard surfaces under the seating area should be vigorously mopped with mild detergent to remove dirt and accumulated biomass, then mopped with fungicidal solution.

*Curtains, main theater (red) and vertically movable (black) should be cleaned by steam extraction then HEPA vacuumed. Stage firewall is inoperable and unmovable, making it inaccessible for cleaning.

South Hallway behind main stage should be sealed from main auditorium and outside loading dock area:

1) HEPA vacuuming of ceiling tiles and hard surfaces.
2) All hard surfaces should be damp wiped with mild detergent and fungicidal solution.
3) Cleaning should be done in the presence of air scrubbers.
4) If doors heavily contaminated with fungal biomass do not visibly clean with mild detergent and fungicidal solution, it is recommended they be replaced or sealed. The bathroom in the first dressing area to the right of water fountain in hallway exhibited the most fungal degradation during original and secondary assessment.
5) Extra scrubbing may be required to remove microbial biomass from metal refrigerator and water fountain metal surfaces.
6) Final HEPA vacuuming of hard surfaces is recommended as a final step.

Southeast lower-level storage area adjoining room under main stage facing pit access:

1. This room exhibited microbial growth on both wood and synthetic seat surfaces. These surfaces should be cleaned by damp wiping with mild detergent then fungicidal solution. Remaining porous surfaces (equipment covers and soft materials) should be HEPA vacuumed.
2. There are chairs located in pit hydraulic room that should be moved to main room under stage, damp wiped with mild detergent, then moved to southeast storage room to be wiped down with fungicidal solution. These are found through the east pit access door and are stacked to the left along pit ledge.
3. The wooden tables in the main room directly under the stage, west of southeast storage room, should be damp wiped with mild detergent then moved into storage room for final wipe with fungicidal solution.
4. There are wooden crate boxes in this main room under stage area that will need to be damp wiped with mild detergent and fungicidal solution. Microbial attack was present on these wooden surfaces but were more superficial.
5. Final fungicidal cleaning of these materials should be done in the presence of air scrubber.
6. An air scrubber can be placed in the main room under stage to aid in preventing any additional cross contamination.
7. Sealing the double doors connecting the southeast storage room and the main storage room under the stage is recommended to prevent contamination from the far reaches of the hydraulic pit room. The pit appears to remain constantly damp possibly due to hydraulic fluid leakage in the lower reaches of the concrete structure.

Acoustical ceiling tile with HVAC supply in main auditorium hall

Photo 2

Visible debris on second floor west side of auditorium hall

Photo 3

Microbial growth extending north in area of proposed carpet removal

Photo 4

Multi species microbial growth directly in front of stage in area of proposed carpet removal

HVAC return duct work below structure and directly below main auditorium hall

Photo 2

HVAC return with hole cut into main return below main auditorium hall

Photo

View of access hole cut into the HVAC return below main auditorium

Photo

Second view point of hole cut into the HVAC return below main auditorium

Looking down on main auditorium seating. View of metal structures on mezzanine.

Photo 2

Looking up at ceiling seam inline with possible ceiling leak

Photo 3

Possible roof leak on west-northwest side of building

Photo 4

Second vantage point of main auditorium looking down from mezzanine. Pictured is the topside of acoustical tiles. There is dust but no sign of microbial biomass.

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THALIA MARA HALL

INDOOR AIR QUALITY ASSESSMENT

Jackson, MS

August 9, 2024

Project #044882

Indoor Air Quality Assessment

Prepared By:

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Building Science Services

Reviewed By:

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Senior Industrial Hygienist
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Summary

On August 9, 2024, an Industrial Hygienist from CTEH® conducted an indoor air quality assessment for the Thalia Mara Hall at 255 E Pascagoula Street, Jackson, Mississippi. As a part of the assessment, the industrial hygienist collected air samples for mold spores and conducted real-time air monitoring for temperature and relative humidity. A visual inspection was also conducted in accessible areas of the facility as well as heating, ventilation, and air conditioning (HVAC) systems in the building. Thermal imaging was conducted in areas to determine if moisture was present in building materials.

Initial Inspection

The total indoor spore levels were above the outdoor levels in five cases and *Penicillium/Aspergillus* exceeded outdoor levels in all cases. Elevated concentrations of *Penicillium/Aspergillus* were reported in Main auditorium sample sites #2 & #5, basement floor storage room, and ground floor sample location #11. Sample #11 was collected in the west room across from refreshment station and couch seating. This floor, especially this room, exhibited strong fungal odors. Many of the return-air grates contained a visible presence of dust, debris and suspect mold growth. There was significant multi species biofouling of wood surfaces on this floor. The wood surfaces of doors, furniture, and synthetic baseboards being the most heavily affected. The main auditorium hall presented significant fungal biofouling in carpeting, surface contamination of wood armrests and handrails, and exceedances in spore trap samples #2 and #5. A five-point sampling strategy was employed in this environment because of cubic volume and stratification concerns. The sampling methodology should have captured the most unbiased fungal data in terms of randomness and proximities to visual fungal biofilms. Surface contamination of carpet and hard surfaces on second floor balcony was visibly less than first floor locations. This is supported by the laboratory analyses. The soft surfaces of seats and curtain upholstery were closely examined, and no visible growth was determined. Because of the spore load in these locations, it is likely that spores are present on these soft surfaces, but environment and labile carbon restrictions are preventing primary hyphae tube growth and colony formation. The laboratory report is provided in **Appendix A**.

Fungal spore traps confirmed that the atmospheric spore load was on average greater than the outdoor control. The most prominent genera were the *Penicillium* and *Aspergillus*. *Cladosporium* was in the heavily impacted ground floor west room (sample #11), sample site #6 (second floor lobby), but was not located in basement storage room (sample site #9). Alternaria was also present at sampling location #6 (second floor lobby).

Indoor environmental parameters were collected, and relative humidity measurements ranged from 50.5% rH to 61.5% rH. Limits were established by the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE), and above the United States Environmental Protection Agency (USEPA)

recommended range of 30 to 60% relative humidity. Locations with elevated levels of humidity are at a higher risk for mold growth developing.

The inspection of the primary HVAC air handler unit in the mechanical room was not done as the system was still running and site manager could not shut down. There was a typical presence of accumulated dust and debris common to air handler units and return air grates. Otherwise, the examination of the accessible areas of the supply and return-air ducts were found to be in good condition except for ground floor supply air diffusers, especially sampling site 11 (heavily impacted room).

1.0 Background

CTEH® was contacted by the City of Jackson Mississippi to conduct an indoor air quality (IAQ) assessment at the Thalia Marah Hall Performing Arts Theater at 255 E Pascagoula Street, Jackson, Mississippi. The initial assessment was requested due to recent staff complaints regarding malodors, visible fungal growth, and diminished HVAC capabilities. This industrial hygiene assessment was conducted to determine mold concentrations in the affected areas of the building and the identification of possible odor or mold sources in the occupied spaces.

1.1 CTEH® Activities

On August 9, 2024, a CTEH® Industrial Hygienist collected mold air samples from 10 locations in the facility as well as one outdoor location. Each location where mold sampling was conducted consisted of spore trap air sampling for non-viable mold spores and viable mold air sampling. The viable mold sampling indicates what types of live molds (currently growing) are present, as well as identifies the individual types of molds. Temperature and humidity were monitored at each indoor location where mold air sampling was conducted.

Assisting with the inspection was Judson Vance. Mr. Vance is the facilities manager and was extremely helpful in navigating the suspect and prominently impacted areas of the site. A photo log of identifiable areas of concern and observations is attached in **Appendix B**.

2.0 Observations

During the assessment, visible dirt, debris, and suspect mold growth was observed on many surfaces. Overt and established fungal biofilms were present throughout the carpet on the first-floor auditorium. Pervasive contamination of wood surfaces was also present on the first floor of the main auditorium. Malodor and significant growth were observed on the ground floor Lobby and refreshment area. The wood and synthetic surfaces of furniture in the area were inundate with established fungal growth from putative secondary colonizers. The most impacted room, sampling location #11, was also located on this floor. The odor and atmospheric organic load influenced breathing while sampling. This area contained

the second visual assessment of dematiaceous fungal genera, located at two locations on synthetic baseboards. Fungal growth was observed on wooden door surfaces which exhibited stable and established fungal structures. All this is indicative of a catastrophic loss of HVAC functionalities leading to atmospheric disruption conducive to fungal establishment and proliferation.

The Occupational Safety and Health Administration (OSHA) has promulgated standards designed to protect the health and safety of workers (OSHA 29 CFR 1910.1000); however, there are currently no officially promulgated occupational or public health standards for interpreting airborne bioaerosol sample results. Guidelines published by the American Conference of Governmental Industrial Hygienist (ACGIH) recommend comparing the indoor and outdoor air sampling results (ACGIH, 1999). In general, the types of mold and their airborne concentrations found indoors should be similar (in non-problem buildings) to the outdoor air. Differences in either airborne concentrations or types of mold may indicate the presence of moisture sources and resultant mold growth.

ASHRAE has published Standard 62.1-2016, *Ventilation for Acceptable Indoor Air Quality*, which outlines the minimum requirements for HVAC system design and function to help ensure indoor air quality is acceptable to human occupants and is intended to minimize the potential for adverse health effects. According to ASHRAE 62.1-2016, the minimum amount of properly filtered and conditioned outside air that should be supplied to a typical office space is 20 cfm per person.

2.1 Real-Time Air Monitoring

The CTEH® Industrial Hygienist collected environmental data using IAQ 15 Connect Pro Portable (spore trap) and Protimeter moisture meter and Hygrometer instruments at multiple locations in the building. These instruments were employed at each sampling location. These psychometric parameters are indicators of the efficiency of a building's HVAC system as well as overall comfort in the building.

Table 5.1a Environmental Air Monitoring Locations

Location	Sample ID	Sample Date	Temperature (°F)	Humidity (%)	GPP
1st floor front of auditorium seating center	1	08/09/2024	90.7	50.5	123.5
1st floor front of auditorium seating SW corner seat	2	08/09/2024			
1st floor auditorium- West middle section-seat #2	3	08/09/2024			
1st floor auditorium- East middle section-seat #11	4	08/09/2024	90.9	55.3	121.7
1st floor auditorium far back wall directly in front of control/observation booth	5	08/09/2024			
3rd floor Balcony-middle section			91.3	57.1	123.9
2nd floor center of lobby	6	08/09/2024	90.5	55.0	118.5
3rd floor Balcony-middle section	7	08/09/2024	91.4	56.6	125.6
Hallway behind stage water fountain	8	08/09/2024			
Ground floor room West of refreshments station			90.5	56.4	121.9
Southeast basement storage	9	08/09/2024			
Outside Loading Dock	10	08/09/2024	89.0	58	119.2
Ground floor room West of refreshments station	11	08/09/2024	87.8	61	121.0
Pit hydraulics*	-	08/09/2024	89.2	61.5	127.6

*unofficial sampling location but it was indicated that this was a source of constant moisture. Mix of hydraulic fluids and water present on floor

2.2 Bioaerosol Sampling

A total of 11 bioaerosol (spore trap) air samples were collected during the inspection on August 9, 2024. For comparison, one sample was collected from outdoors. Locations for each sample are provided in **Table 5.2** hereafter.

Table 5.2a Spore Trap Sample Locations

Sample ID	Sample Type	Sample Date	Location
1	Spore Trap	08/09/24	1st floor front of auditorium seating center
2	Spore Trap	08/09/24	1st floor front of auditorium seating SW corner seat
3	Spore Trap	08/09/24	1st floor auditorium- West middle section-seat #2
4	Spore Trap	08/09/24	1st floor auditorium- East middle section-seat #11
5	Spore Trap	08/09/24	1st floor auditorium far back wall directly in front of control/observation booth 3rd floor Balcony-middle section
6	Spore Trap	08/09/24	2nd floor center of lobby
7	Spore Trap	08/09/24	3rd floor Balcony-middle section Outside Loading Dock
8	Spore Trap	08/09/24	Hallway behind stage water fountain Ground floor room West of refreshments station
9	Spore Trap	08/09/24	Southeast basement storage
10	Spore Trap	08/09/24	Outside Loading Dock
11	Spore Trap	08/09/24	Ground floor room West of refreshments station

Bioaerosol air samples were collected using a IAQ 15 Connect Pro connected to a Zefon Air-O-Cell cassette. As recommended by Zefon, each sample was collected over a five-minute period at a flow rate of 15 liters per minute (LPM), resulting in a total air sample volume of 75 liters (L). EMSL Analytical, Inc. analyzed the spore trap samples by optical microscopy using method EMSL 05-TP-003, ASTM D7391 to determine the genus of any mold spores present along with the total spores per cubic meter of air (spores/m^3).

2.3 Visual Inspection

A visual inspection was conducted in all areas that were accessible. These areas included offices, mechanical systems, mechanical rooms, guest rooms, common areas, and above the drop ceiling. Thermal imaging was also used in these areas to help identify moisture sources. The thermal imaging camera can identify areas where moisture could be accumulating. Due to moisture's evaporative cooling properties, the areas where moisture is present tend to be cooler in temperature, unless a hot water leak is found. Carpet was measured for moisture, ceiling tiles were surveyed with FLIR thermal imager, and psychrometric readings were taken throughout facility. Historical refences for previous leaks in the structure were provided by Judson Vance. He also provided a qualitative timeline for visual emergence of fungal communities juxtaposed with outside atmospheric events. And, in an important observational reference, provided visual descriptions of high moisture events occurring on all surfaces inside the facility. This is conducive to condensation events providing moisture for fungal establishment and growth.

3.0 Results and Discussion

3.1 Initial Inspection Results and Discussion

The analytical laboratory reports are provided in **Appendix A**.

3.1.1 Real-Time Air Monitoring

Relative humidity measurements of all floors ranged from 50.5% to 61.5%, the USEPA recommended range of 30% to 60% relative humidity as well as the AHRAE limit of 65%. The relative humidity range for all measures except 2, location #11 and basement pit hydraulics room areas were within acceptable limits. However, the actual weight of water in the atmospheric was elevated throughout the facility ranging from 119.2 GPP-127.6 GPP. This is indicative of the atmosphere being laden with H2O and susceptible to pronounced condensation events with the lack of roper HVAC control. This condensation could lead to rapid fungal establishment and proliferation. Fungal Isopleths with follow this path of available water condensate in relation to water activity of the system and can deviate if optimal temperature is present.

3.1.2 Bioaerosol Sampling-Mold Spores

Overall the total spore concentration for the indoor air samples are exceeding the outdoor levels, the rear of the main auditorium floor had elevated levels of *Penicillium/Aspergillus* and the ground floor west room (site #11) sitting/lobby area contained elevated *Penicillium/Aspergillus/Cladosporium*. The presence of the *Penicillium/Aspergillus* in the main auditorium room may be attributed to the age of the carpeting and a lack of adequate carpet cleaning due to heavy foot traffic and soiling of the carpet. This debris contamination of high traffic carpeted areas provides a varied array of nutrients (labile carbon) that aids in fungal growth when the appropriate water activity and temperature levels are reached.

4.0 Conclusions

On average the indoor fungal levels exceeded the outdoor levels. Elevated *Penicillium/Aspergillus* was detected at sampling locations #2, #5, #9, and #11, Main 1st floor auditorium, Basement storage, and ground floor west room, respectively. Sources of fungal contaminations were likely both endogenous and from the immediate outside environment. Proposed as hypothesis is the atmospheric rain events coupled with indoor condensation from lack of climate control and temperature/nutrient sources being optimal on surfaces facilitated the primary proliferation event. Community structures maintained growth from optimal conditions after this point. There was evidence of moisture or water intrusion from previous roof leak at East side escalators, East second floor lobby area which may contribute to mold growth or malodors in the building. There were several other visible water stains on ceiling tiles documented throughout the facility. It is likely that the primary water intrusion is atmospheric and external through high humidity events encroaching inside without HVAC control and stabilization. There is a persistent roof look in loading dock area directly in front of HVAC/mechanical control room. However, it appears that the bay doors adjacent remain open to aid in air circulation during the day and this leak is outside the controlled environment.

The presence of *Cladosporium* in indoor environments is not unusual and may be associated with accumulated dust and poor housekeeping on certain flat surfaces. Air handling units which collect dust and debris over time may develop Cladosporium due to favorable conditions for mold growth.

Additional notes: From anecdotal evidence and through comments from the site manager, the presence of fungi was not visible to the degree present now on the date of Friday July 26, 2024. This date correlates with a recent rain event in that area. On the July 29, 2024 the presence of fungal structures were visible on the carpet. Judson Vance made the note that when arriving that morning it looked like the entirety of the floors were wet. This was just surface wetness but was noted as significant. This could be evidence of the temperature dropping below the dewpoint temperature for that atmosphere and creating significant condensate for initiation of microbial metabolisms.

Based on the information gathered during the initial inspection, including visual observations and sampling data, it is recommended that the following actions be considered at Thalia Marah Hall:

1. Immediate stabilization of indoor environment and repair of the HVAC system.

2. Removal of carpet from stage North until the end of the first section. The fungal communities are pronounced in this substrate visually, this is indicative of the presence of non-visible hyphae growth underneath and through the carpet substratum. This will remain a reservoir for future contamination. The second half of the 1st floor section in main auditorium may be able to be cleaned but exploratory samples should be taken to discount or confirm subsurface fungal spread. The carpeting in the 1st floor main auditorium should be cleaned if removal and replacement is

not an immediate option. Cleaning of the carpeting may be accomplished using a steam injection and water extraction device which will clean any soiled or stained areas yet remove residual moisture from the carpeting. Hard surfaces in the conference room, such as tables and chairs should be damp-wiped using a mild detergent solution. A HEPA-equipped air filtration device (AFD) should be operated in the conference room during all cleaning activities to reduce the amount of aerosolized dust and potential mold spores.

3. All hard surfaces should be damp wiped with a mild detergent and fungicidal solution. This includes floors, walls, return and supply air vents, chair armrests, handrails, hard portions of seatbacks, furniture, counter tops and flat surfaces.

4. All soft upholstery surfaces should be cleaned with appropriate mild detergent and fungicidal solution where appropriate to use. Steam injection can be a first stage to this process for immediate removal of organics and fungal mass.

5. Fungal growth on hard metal surfaces should be vigorously cleaned with mild detergent and fungicidal solution. No bleach for stainless steel surfaces. Hard metal surfaces can also be wet-wiped using soap and water. This would include the fan blades, housing, and supporting metal components. The air handler unit must be taken offline and de-energized during all servicing and cleaning activities.

6. Contact cleaning of the supply air diffusers in the ceilings on the ground, 2nd, and 3rd floors. This may be accomplished by simply removing the spring-loaded portion of the diffuser and cleaning using a mild detergent solution. The surrounding ceiling may be also damp-wiped using a mild detergent solution.

7. The interior of the interior ground floor air handler unit should be contact cleaned where accumulated dust and mold growth was present in the fan housing compartment. The surfaces of the insulation can be damp-wiped using a mild detergent solution. Hard metal surfaces can also be wet-wiped using soap and water. This would include the fan blades, housing, and supporting metal components. The air handler unit must be taken offline and de-energized during all servicing and cleaning activities.

8. All surfaces in the ground floor Lobby area should be disinfected and wiped down with mild detergent and fungicidal solution. Careful attention should be paid to Sampling site #11 room and adjacent wall surfaces. Furniture should be thoroughly cleaned. Wooden doors with significant fungal impact should be removed and replaced. All based boards need to be cleaned with mild detergent and fungicidal solution and I would recommend the removal and replacement of the two sections most impacted by dematiaceous

9. It is recommended there be a final air quality clearance survey post implementation of remediation strategy to assess surfaces and to conduct a reduced spore trap survey. As well as to conduct a psychrometric survey to ensure HVAC is performing to specifications.

10. A HEPA-equipped air filtration device (AFD) should be operated in all fungal impacted locations during all cleaning activities to reduce the amount of aerosolized dust and potential mold spores.

5.0 References

ACGIH. Bioaerosols: assessment and control. Cincinnati, Ohio: American Conference of Governmental Industrial Hygienists. 1999.

AIHA. Facts About Mold. American Industrial Hygiene Association. December, 2011.

ASHRAE (2016) *Ventilation for acceptable indoor air quality*, Atlanta, GA: American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc. (ANSI/ASHRAE Standard 62.1-2016).

OSHA. Air contaminant--permissible exposure limits. 29 CFR 1910.1000

Appendix A

Thalia Marah Hall

CTEH Project Number: 044882

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Laboratory Reports

Thalia Marah Hall

CTEH Project Number: 044882

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200 Route 130 North Cinnaminson, NJ 08077
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http://www.EMSL.com / cinnmicrolab@emsl.com

EMSL Order: 372413224
Customer ID: CTEH99
Customer PO:
Project ID:

Attention: Christopher Flood
CTEH Center for Toxicology & Env. Health
5120 North Shore Drive
North Little Rock, AR 72118

Project: Thalia

Phone: (501) 801-8500
Fax: (501) 614-2835
Collected Date: 08/09/2024
Received Date: 08/10/2024 11:30 AM
Analyzed Date: 08/10/2024

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

Lab Sample Number:	372413224-0001			372413224-0002			372413224-0003		
Client Sample ID:	1			2			3		
Volume (L):	75			75			75		
Sample Location:	Main Hall storage			Main Hall			Main Hall		
Spore Type:	**Raw Count†**	**Counts/m³**	**% of Total**	**Raw Count†**	**Counts/m³**	**% of Total**	**Raw Count†**	**Counts/m³**	**% of Total**
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium++	102(175)	7180	93.1	112(336)	13600	97.9	53	2200	94
Basidiospores	2	80	1	2	80	0.6	3	100	4.3
Bipolaris++	-	-	-	1	10*	0.1	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	11	450	5.8	5	200	1.4	1	40	1.7
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Ceriosporа++	-	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	-	-	-
Total Fungi	**169**	**7710**	**100**	**344**	**14030**	**100**	**57**	**2340**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	41	-	-	41	-	-	41	-
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	2	-	-	2	-	-	1	-

† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

++ 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.

Vincent Iuzzolino, M.S., Laboratory Manager
or other Approved Signatory

Initial report from: 08/12/2024 10:27 AM

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

Thalia Marah Hall

CTEH Project Number: 044882

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Customer ID: CTEH99
Customer PO:
Project ID:

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Fax: (501) 614-2835
Collected Date: 08/09/2024
Received Date: 08/10/2024 11:30 AM
Analyzed Date: 08/10/2024

Project: Thalia

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

Lab Sample Number:	372413224-0004			372413224-0005			372413224-0006		
Client Sample ID:	4			5			6		
Volume (L):	75			75			75		
Sample Location:	Main Hall			Main Hall Bank			Lobby Area		
Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total
Alternaria (Ulocladium)	-	-	-	-	-	-	2	30*	1.4
Ascospores	-	-	-	-	-	-	1	40	1.9
Aspergillus/Penicillium++	91	3780	88.7	185(370)	15280	99.7	13	530	25.2
Basidiospores	-	-	-	-	-	-	8	300	14.3
Bipolaris++	-	-	-	-	-	-	1	10*	0.5
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	14	570	13.3	1	40	0.3	27	1100	52.4
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	2	80	3.8
Myxomycetes++	-	-	-	-	-	-	1	10*	0.5
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Cercospora++	-	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	-	-	-
Total Fungi	105	4270	100	371	15240	100	55	2100	100
Hyphal Fragment	-	-	-	-	-	-	1	40	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 600x	-	41	-	-	41	-	-	41	-
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	-

† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

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

Vincent Iuzzolino

Vincent Iuzzolino, M.S., Laboratory Manager
or other Approved Signatory

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

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ AIHA-LAP, LLC-EMLAP Accredited #100324

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EMSL Order: 372413224
Customer ID: CTEH99
Customer PO:
Project ID:

Attention: Christopher Flood
CTEH Center for Toxicology & Env. Health
5120 North Shore Drive
North Little Rock, AR 72118

Phone: (501) 801-8500
Fax: (501) 614-2835
Collected Date: 08/09/2024
Received Date: 08/10/2024 11:30 AM
Analyzed Date: 08/10/2024

Project: Thalia

Test Report: Air-O-Cell(™) Analysis of Fungal Spores & Particulates by Optical Microscopy (Methods MICRO-SOP-291, ASTM D7391)

Lab Sample Number:	372413224-0007			372413224-0008			372413224-0009		
Client Sample ID:	7			8			9		
Volume (L):	75			75			75		
Sample Location:	Male Hall Upstairs			Stage Hallway			Storage Area		
Spore Type:	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total
Alternaria (Ulocladium)	-	-	-	-	-	-	-	-	-
Ascospores	-	-	-	-	-	-	-	-	-
Aspergillus/Penicillium++	3	100	26.3	23	940	85.5	107(183)	7510	100
Basidiospores	2	80	21.1	2	80	7.3	-	-	-
Bipolaris++	-	-	-	-	-	-	-	-	-
Chaetomium++	-	-	-	-	-	-	-	-	-
Cladosporium	4	200	52.6	2	80	7.3	-	-	-
Curvularia	-	-	-	-	-	-	-	-	-
Epicoccum	-	-	-	-	-	-	-	-	-
Fusarium++	-	-	-	-	-	-	-	-	-
Ganoderma	-	-	-	-	-	-	-	-	-
Myxomycetes++	-	-	-	-	-	-	-	-	-
Pithomyces++	-	-	-	-	-	-	-	-	-
Rust	-	-	-	-	-	-	-	-	-
Scopulariopsis/Microascus	-	-	-	-	-	-	-	-	-
Stachybotrys/Memnoniella	-	-	-	-	-	-	-	-	-
Unidentifiable Spores	-	-	-	-	-	-	-	-	-
Zygomycetes	-	-	-	-	-	-	-	-	-
Cercospora++	-	-	-	-	-	-	-	-	-
Nigrospora	-	-	-	-	-	-	-	-	-
Total Fungi	**9**	**380**	**100**	**27**	**1100**	**100**	**183**	**7510**	**100**
Hyphal Fragment	-	-	-	-	-	-	-	-	-
Insect Fragment	-	-	-	-	-	-	-	-	-
Pollen	-	-	-	-	-	-	-	-	-
Analyt. Sensitivity 68/m³	-	41	-	-	41	-	-	41	-
Analyt. Sensitivity 300/m³	-	13*	-	-	13*	-	-	13*	-
Skin Fragments (1-4)	-	1	-	-	1	-	-	1	-
Fibrous Particulate (1-4)	-	1	-	-	1	-	-	1	-
Background (1-5)	-	1	-	-	1	-	-	1	-

† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

++ 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.

Vincent Iuzzolino, M.S., Laboratory Manager
or other Approved Signatory

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ AIHA LAP, LLC-EMLAP Accredited #100434

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Attention: Christopher Flood
CTEH Center for Toxicology & Env. Health
5120 North Shore Drive
North Little Rock, AR 72118

Project: Thalia

Phone: (501) 801-8500
Fax: (501) 614-2835
Collected Date: 08/09/2024
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Analyzed Date: 08/10/2024

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

Lab Sample Number:	372413224-0010			372413224-0011			
Client Sample ID:	10			11			
Volume (L):	75			75			
Sample Location:	Outside Dock			1st Floor Impacted Room			
Spore Types	Raw Count†	Count/m³	% of Total	Raw Count†	Count/m³	% of Total	
Alternaria (Ulocladium)	5	200	3.5	1	10*	0	
Ascospores	5	200	3.5	1	40	0	
Aspergillus/Penicillium++	-	-	-	249(1490)	61100	34.5	
Basidiospores	43	1800	31.1	5	200	0.1	
Bipolaris++	1	40	0.7	-	-	-	
Chaetomium++	-	-	-	-	-	-	
Cladosporium	56	2300	39.8	175(2800)	115000	65.2	
Curvularia	3	100	1.7	-	-	-	
Epicoccum	-	-	-	-	-	-	
Fusarium++	-	-	-	-	-	-	
Ganoderma	2	80	1.4	1	40	0	
Myxomycetes++	10	410	7.1	-	-	-	
Pithomyces++	3	100	1.7	-	-	-	
Rust	1	10*	0.2	-	-	-	
Scopulariopsis/Microascus	-	-	-	-	-	-	
Stachybotrys/Memnoniella	-	-	-	-	-	-	
Unidentifiable Spores	-	-	-	-	-	-	
Zygomycetes	-	-	-	-	-	-	
Cercospora++	13	530	9.2	-	-	-	
Nigrospora	1	10*	0.2	-	-	-	
Total Fungi	**143**	**5780**	**100**	**4298**	**176390**	**100**	
Hyphal Fragment	2	80	-	-	-	-	
Insect Fragment	-	-	-	1	40	-	
Pollen	-	-	-	-	-	-	
Analyt. Sensitivity 600x	-	41	-	-	41	-	
Analyt. Sensitivity 300x	-	13*	-	-	13*	-	
Skin Fragments (1-4)	-	1	-	-	1	-	
Fibrous Particulate (1-4)	-	1	-	-	1	-	
Background (1-5)	-	2	-	-	1	-	

† Due to method stopping rules, extrapolated raw counts are reported in parenthesis.

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

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

Vincent Iuzzolino

Vincent Iuzzolino, M.S., Laboratory Manager
or other Approved Signatory

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CTEH Project Number: 044882

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Thalia Marah Hall

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Appendix B

Photo Log

Thalia Marah Hall

CTEH Project Number: 044882

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Photo 1

Fungal growth on carpet in front row directly in front of stage. Significant growth observed.

Photo 2

Facing North toward lobby from stage. Fungal growth extends up gradient to lobby doors.

Photo 3

Spore trap air sampling with air-o-cell and IAQ 15-first row, middle section.

Photo 4

Sampling location and sample #7 Balcony seating facing stage.

Photo 5

Represenative armrest of fungal growth on first floor auditorium hard surfaces (wood)

Photo 6

Directly East of sample location and sample# 5- fungal growth present on wood surfaces

Photo 7

Fungal contamination of armrest but no visible on upholstery. Middle section close to stage.

Photo 8

Fungal growth hard surfaces moving North from stage-still no visible upholstery contamination

Photo 9

Sampling location and sample #8 next to water fountain. Visible stain on ceiling tile.

Photo 10

Facing East from photo #9. Same hallway. Visible surface contamination of painted metal on top of refrigerator.

Photo 11

Sampling location and sample #9. Southeast basement storage. Surface growth on chairs and piano.

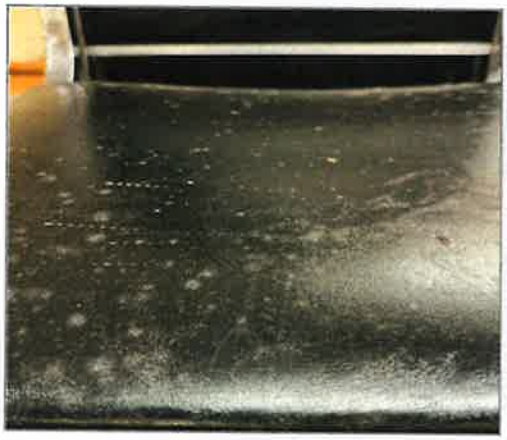

Photo 12

Chair surface from photo #11 location.

Photo 13

Ground floor lobby west of center of lobby and refreshment/couch seating area. Wooden door significantly contaminated. Room represents sampling site #11

Photo 14

Same door from photo #13. Large spore mass on surface.

Photo 15

Facing North and accross from site #11 in photo 14. Dematiacious fungal growth on sythetic base boards

Photo 16

Close up of photo 15 for reference.

Photo 17

In room representing Sampling Site #11. Mix of AMG and dust on supply diffuser.

Photo 18

Ceiling tiles water stained and presumed AMG in the same room as photo 11 representing Sampling site #11

Photo 19

Sampling Site # 11 further indication of moisture intrusion in this room from ceiling tile stains. Significant odor.

Photo 20

Hallway directly East of restricted room Site #11- sythetic baseboards exhibiting fungal growth from dematiacious colonizers

Photo 21

Ground floor lobby, East of highly impacted Site #11, pervasive colonization of couch surfaces with fungal growth

Photo 22

Ground floor lobby couch with additional fungal growth-different vantage point

Photo 23

Sister room to Site #11, Ground floor lobby, East door. Significant fungal growth on wood door surface

Photo 24

Moving East from photo 11 door, ground floor lobby. Chairs are contaminated with fungal structures.

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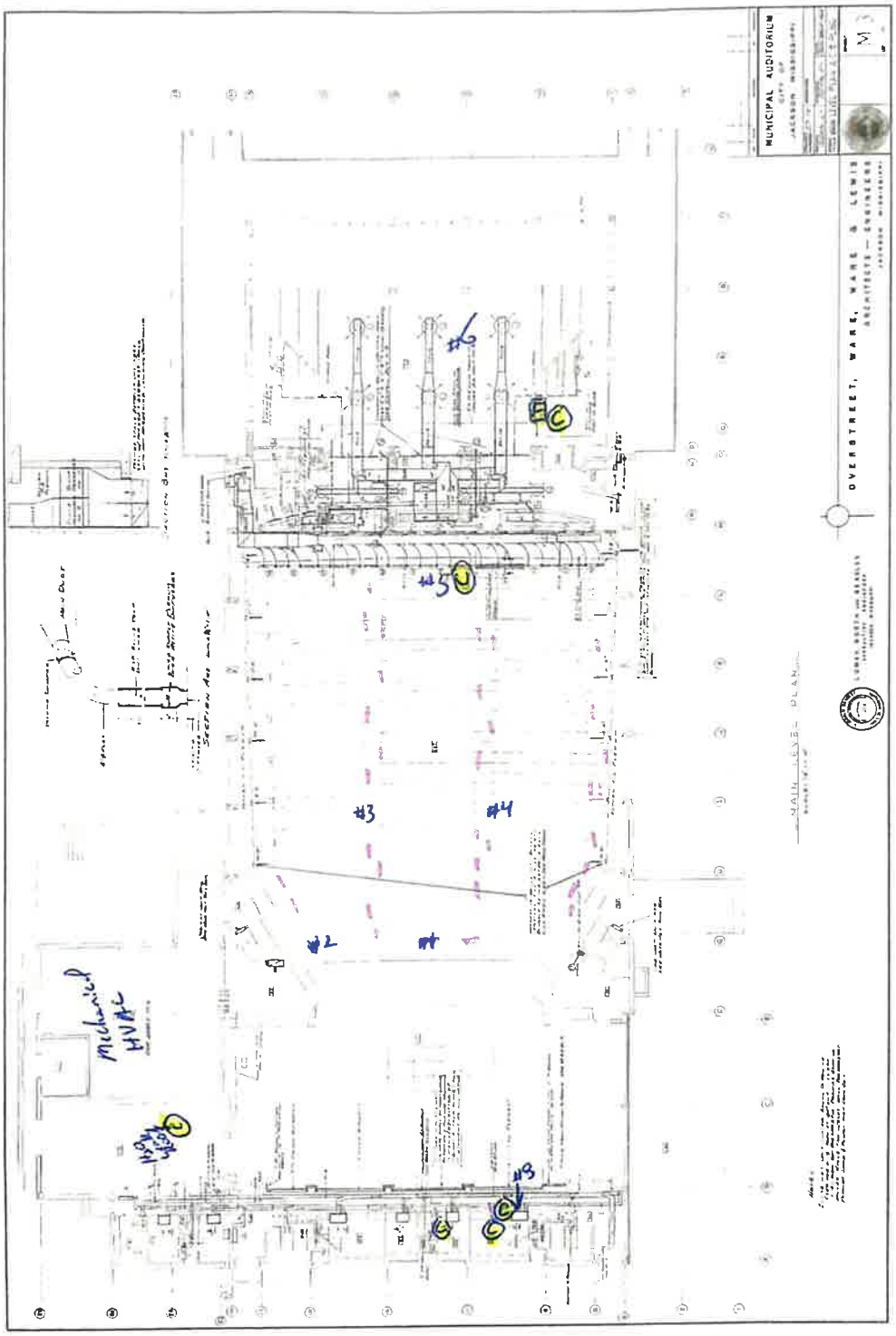

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