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AIRMD®
ENVIRONMENTAL CONSULTANTS

Indoor Air Quality Assessment

Project Location:
Florida State University – Sandels Building
675 West Call Street,
Tallahassee, FL 32304

Purchase Order:
FS22001764

Prepared For:
Florida State University
675 West Call Street,
Tallahassee, FL 32304

Date: 8/11/21

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1.0 Executive Summary

AirMD is providing assessment results to the client for the above referenced project. AirMD's objective was to conduct an indoor fungal assessment of the property. The project was requested as a result of reported occupant concerns regarding the indoor air quality following the discovery of excess dust and debris that is found on the surfaces throughout the building. A site assessment was completed on July 28, 2021. The site visit assessed the visible accessible areas of the property that was agreed with the client and collected samples and measurements. The information provided in this report is based upon the agreed scope relative to the reported issue(s)/claim and include the entire property.

At the time of assessment, elevated moisture was detected on the exterior walls in rooms 242-I and 242-F. The condition(s) suggest moisture intrusion pathways may exist through the building envelope allowing for potential moisture exposure to interior building components. Moisture control is fundamental to the proper functioning of any building. Controlling moisture is important to protect occupants from adverse health effects and to protect the building, its mechanical systems, and its contents from physical damage and to prevent mold growth. It is recommended to contact a qualified licensed engineer or certified general contractor to correct the moisture intrusion issues. It is recommended to contact a qualified licensed engineer or certified general contractor to correct the moisture intrusion issues.

Dust and debris was present on the surfaces throughout the assessed areas. It was reported that this occurs often and is cleaned up regularly. Bio-aerosol sampling conducted identified elevated fungal quantities belonging to Cladosposium sp. in rooms 214 and 300A in the ambient air. As no known cause was identified, evaluate the air conditioning systems to identify if it is a contributory source. If it is a contributory source, the system should be cleaned in accordance with NADCA standards. If it is not a contributory source, invasive testing should occur prior to commencement of work. Assessment should be completed by an Air Systems Cleaning Specialist (ASCS), Certified Ventilation Inspector (CVI), or equivalent, to determine the preliminary state of HVAC system cleanliness and condition of the ductwork.

Prior to commencing remediation, all issues should be identified and corrected. Containment is required in the rooms 214, 242-I, 242-F and 300-A.

2.0 Introduction

The subject property is a university building of concrete construction with a flat roof system. In the areas assessed, split system air conditioner(s) serve the structure and the interior walls are gypsum board while the ceilings are a combination of gypsum board and concrete. AirMD was retained to conduct an assessment of the property based on reported occupant concerns regarding the indoor air quality following the discovery of excess dust and debris that is found on the surfaces throughout the building. The agreed scope of work includes a non-invasive assessment of the entire property relative to the reported issue(s)/claim.

Note, the site assessment did not include invasive testing and was specific to the scope of work described previously. Hidden areas of mold growth and other environmental issues may exist, and areas of damage not related to the reported issue(s)/claim may also exist and are not covered under this scope of work.

The purpose of the report is to detail the observations and findings and to present corrective measures if required based on the findings. It is very important that the necessary time be taken to read the report in its entirety.

3.0 Methodology

Project planning, development and execution was conducted in general accordance and consistent with the ASTM D7338-10 Standard Guide for Assessment of Fungal Growth in Buildings, guidelines published by the American Industrial Hygiene Association (AIHA) in Recognition, Evaluation, and Control of Indoor Mold and guidelines published by the American Conference of Governmental Industrial Hygienists (ACGIH) in Bioaerosols Assessment and Control. A full list of reference materials is listed in the Appendix section of this report. AirMD performed the following scope of work and sampling plan pursuant to discussions with the client(s) which included the following:

- Conduct a visual assessment of the accessible areas for the presence of water damage, water stains, moisture intrusion sources and fungal (mold) growth.

- Measure ambient temperature, relative humidity and dew point and compare to recommended industry guidelines to determine their effect on thermal comfort and supporting conditions for mold growth. Measurements are collected using a hygrothermometer which uses a precision capacitance sensor for measurement.

- Conduct moisture mapping of accessible building materials to identify whether the moisture equivalent values of the materials tested would be deemed elevated, suggesting exposure to moisture. Measurements are collected using a GE Protimeter Surveymaster moisture meter which has two modes, a search mode and a measure mode. In search mode, the moisture meter acts as a moisture detector providing readings in relative terms regarding the moisture condition beneath the surface. In measure mode, the moisture meter uses electrical conductance to measure the moisture level of the material between two electrodes. Calibration is completed using the manufacturers field pin calibration device.

- Utilize FLIR infrared camera to show temperature differentials and thermal patterns.

- Collect nine air samples using a calibrated sampling pump and slit impactor cassettes containing a sticky acrylic matrix to trap particulate matter from the ambient air. The total sample volume was 75 liters of air for each sample. eight indoor sample(s) and an outdoor comparison sample were collected.

- Collect three surface swab sample(s) to assess the fungal (mold) presence from surfaces sampled. Samples are collected using collection swabs. The sample areas for each location is approximately 5 square centimeters. Swabs have a fibrous tip and sample collection included placing the swab tip onto the surface to remove any fungal structures that may be present. The swab is placed into a holding tube which contains a transport medium.

- Collect one composite sample to identify if asbestos is present in the dust collected from the surfaces sampled. Samples were collected for analysis by Polarized Light Microscopy (PLM).

- Submit samples under chain of custody for analysis to AEML located in Pompano Beach, FL who is accredited for fungal identification analysis through the American Association for Laboratory Accreditation (A2LA). The laboratory analyzed the samples using Brightfield Microscopy.

- Submit samples under chain of custody for analysis to CA Labs located in Carrollton, TX who is accredited for asbestos fiber analysis through successful participation in the NIST National Voluntary Laboratory Accreditation Program (NVLAP) meeting the requirements of 40 CFR, Part 763.87, Volume 52, and Number 210.

- Interpret the analytical results and compare the results to the comparison samples collected and reference data points.
- Provide a written summary of results report.

4.0 Findings

The observations and findings documented below identify the issues present in each location. They are followed by recommendations for corrective measures that should be implemented.

Observations and Findings:

The visual assessment conducted includes observations of the visible portions of the property consistent with the scope of work. The visual assessment was completed to identify and document visible evidence of mold growth, water damage and/or water intrusion. The visual assessment also allows documentation of the extent of any issues so remedial actions can occur. For the purpose of this report, the front of the property faces east.

Room 401-B and Room 442-G:

- Visible dust and debris were observed on the air conditioner return and supply registers.

Recommendations:

- HEPA vacuum and damp wipe the affected air conditioner return and supply registers.

Rooms 214 and 300A:

- Bio-aerosol sampling identified atypical fungal quantities belonging to Cladosporium sp. in the ambient air.

Recommendations:

- HEPA vacuum and damp wipe all surfaces within the rooms. The carpets present should be cleaned in accordance with the IICRC S520. As directed in the standard most cleaning processes should begin and end with HEPA vacuuming. If concerns exist regarding the effectiveness of HEPA vacuuming, the carpet should be professionally cleaned in accordance with the IICRC S300 *"Standard and Reference Guide for Professional Upholstery Cleaning"*.

Room 242-I:

- Elevated moisture was detected in the exterior north wall.

Recommendations:

- Remove the affected wall. The area of removal measures approximately twelve linear feet and extends eight feet up from the floor. Visually assess the remaining gypsum board for mold growth. In the event that mold growth is observed, remove the affected materials approximately two feet in all directions beyond the edge of growth.

Room 242-F:

- Elevated moisture was detected in the exterior north wall.

Recommendations:

- Remove the affected exterior wall. The area of removal measures approximately two linear feet and extends two feet up from the floor. Visually assess the remaining gypsum board for mold growth. In the event that mold growth is observed, remove the affected materials approximately two feet in all directions beyond the edge of growth.

5.0 Sampling and Measurements

Water/Moisture Intrusion

Controlling moisture is extremely important in the function of any building. Moisture control is important to protect the building components and to protect occupants from adverse health effects from negative conditions because of moisture intrusion.

Moisture problems in residential and commercial properties are commonplace. Many common moisture problems in these properties can be traced to poor decisions in design, construction, and/or maintenance. Elevated moisture in building materials in a property can indicate for example, that plumbing leaks and/or water intrusion from outside sources is occurring. Elevated moisture in building materials can cause property damage and provide favorable conditions for fungal (mold) growth. Moisture mapping the property can identify problem areas.

Moisture mapping was conducted in limited areas throughout the property using a GE Protimeter Surveymaster moisture meter. The meter has two modes, a search mode and a measure mode. In search mode, the moisture meter acts as a moisture detector providing readings in relative terms regarding the moisture condition beneath the surface. It is a useful method to indicate moisture in a substrate.

In measure mode, the moisture meter uses electrical conductance to measure the moisture level of the material between two electrodes. The moisture measurements should not be interpreted as exact moisture content measurements of a material but should be interpreted as the Moisture Equivalent of the material at the time of measurement. Where elevated moisture is detected, it indicates a measurement of 20-99.9% while 17-19.9% is considered borderline. Elevated moisture was detected in some of the building materials.

Moisture Measurement %						
Location	**North**	**South**	**East**	**West**	**Ceiling**	**Floor**
Room 214	9	11	8	13	9	9
Room 242D	12	8	10	9	10	10
Room 242E	10	14	9	10	10	10
Room 242F	21	11	8	8	11	10
Room 242G	10	10	12	8	8	9
Room 242I	53	10	13	11	8	10
Room 242J	14	11	9	12	10	8
Room 300A	8	13		10	8	10
Room 401-B	12	11	14	11	10	NA

Moisture Measurement %						
Location	**North**	**South**	**East**	**West**	**Ceiling**	**Floor**
Room 430	10	13	10	12	9	9
Room 440	8	10	13	11	13	NA
Room 442A	8	-	9	8	10	NA
Room 442G	13	8	8	9	11	NA

Temperature/Relative Humidity/Dew Point Measurements

Indoor temperatures in a property can play a role in thermal comfort, occupant satisfaction with the space, and influence indoor air quality. Relative humidity in general terms is how moist the air is. It is defined as the ratio of the water vapor density (mass per unit volume) to the saturation water vapor density, usually expressed in percent. Elevated humidity indoors can provide favorable conditions for fungal (mold) growth.

Dew point is a predictive measure that indicates the temperature at which moisture in the air will reach 100% and condense onto a surface. It can be a useful measure for controlling moisture levels to avoid fungal (mold) growth because it is usually very easy to determine the temperature of the coldest surfaces within a property. To ensure high moisture levels or condensation does not occur on those surfaces, dew point levels in the air should be controlled in the building to below the temperature of the coldest surfaces in a space.

Temperature, relative humidity and dew-point measurements were recorded using a hygrothermometer and the measurements were compared to ASHRAE (American Society for Heating, refrigerating, Air Conditioning Engineers) standards. The instrument uses a precision capacitance sensor for measurement. Prior to use, bi-annual calibration checks are completed inhouse on the thermohygrometers as part of quality control procedures using a primary standard as well as an annual independent third-party calibration check.

The temperature measurements recorded in the property at the time of our visit were in all areas within the typical range suggested by the ANSI/ASHRAE Standard 55-2013: Thermal Environmental Conditions for Human Occupancy which specifies the combinations of indoor environmental and personal factors that produce acceptable thermal conditions to a majority of occupants within a space. Assuming slow air movement (less than 40 feet per minute) and 50% indoor relative humidity, the operative temperatures recommended by ASHRAE range from 68.5°F to 75°F in the winter, and from 75°F to 80.5°F in the summer.

The relative humidity measurements recorded in the property at the time of our visit were in all areas below 60%. Indoor relative humidity in the 30 to 60 percent range is the most acceptable for comfort. It is recommended by the U.S Environmental Protection Agency (E.P.A) and the American Conference of Governmental Industrial Hygienists (ACGIH) to keep humidity below 60% as a mold preventative measure.

The table below documents the ambient temperature, relative humidity and dew point measurements recorded in the property at the time of assessment.

Location	Temperature °F	Humidity %	Dew Point °F
Room 214	79	51	59
Room 242E	73	57	56
Room 242F	73	56	56
Room 242G	73	55	56
Room 242I	73	55	56
Room 242J	73	56	56
Room 300A	75	59	60
Room 430	74	56	57
Room 440	74	55	56
Room 442A	74	53	56
Room 442G	76	55	58

Bio-aerosol Sampling

The primary purpose of bio-aerosol sampling is to collect ambient air samples to identify whether fungal (mold) structures (spores and hyphal fragments) are present. A secondary purpose is to evaluate the sample data to assess whether the data can be used to assist investigators in testing hypothesis and to evaluate whether atypical conditions exist. Samples collected as part of a sampling plan are often compared to interior comparison, exterior comparison samples and/or outdoor comparison data. Limitations exist with the data produced because to have true statistical confidence in the data requires numerous replicate samples to be collected. Collecting the required number of samples for statistical validity is not always possible in real world situations often due to the economics of collecting so many samples. However, the samples can be used as a tool to assist investigators test hypothesis and develop remedial actions. It is for this reason bioaerosol sampling should never be completed alone, if sampling occurs it must be completed alongside a site investigation and collection of other data because data from bioaerosol sampling cannot be relied upon solely.

According to the United States Environmental Protection Agency (USEPA), when comparing indoor conditions to outdoors for the presence of fungi (mold), air samples should be compared by fungal type and quantity of fungal spore's present. A typical indoor environment without a mold problem contains similar types with similar or lower quantities of fungal spores compared to outdoors levels. Fungal spore quantities higher than outdoors suggests a fungal reservoir(s) exists and is contributing mold spores to the indoor ambient air.

Currently there are no accepted standards or regulatory requirements issued from OSHA, EPA or other state and federal agencies that establish unacceptable levels for fungi (mold) in indoor environments. As a result, utilizing comparison outdoor samples or statistically derived outdoor data is a practical approach to assess conditions in a property.

Variability with outdoor samples over short time spans and changing weather conditions can occur, which result in a lack of confidence in the data when comparing outdoor to indoor samples. When necessary, AirMD utilizes a national accredited laboratory database of typical outdoor fungal concentrations (see table below), to compare indoor to outdoor samples as an aid in interpreting conditions along with the other important aspects of an assessment (including but not limited to visual observations, moisture mapping).

The table for typical outdoor spore levels contains a list of fungal genera with associated spores/m^3 count values. The spore count values are listed under low, medium and high headers. The low and high values represent the 5% and 97.5% percentile values while the medium value is the 50% percentile value (median) of the spore count. To assist with the data interpretation, the medium (median) value was used. Due to the limitations of the sampling and analytical procedures involved with fungal (mold) air samples, the data obtained cannot be used to establish a health-based risk assessment.

Bio-aerosol samples were collected from the rooms 214, 401B, 430, 440, 442G, 300A, 242I and 242 using a sampling pump calibrated to fifteen liters and slit impactor cassettes containing a sticky acrylic matrix to trap particulate matter from the ambient air. The samples once collected were sent to an independent accredited laboratory under chain of custody. All samples were analyzed using brightfield microscopy. In relation to the comparison outdoor air data, elevated fungal spores were detected in the rooms 214 and 300A. Specifically, the following genus/genera were considered elevated: Cladosporium sp.

Typical Florida Outdoor Fungal Comparisons (spores/m^3)			
Fungal Type	**Low**	**Medium**	**High**
Alternaria sp.	7	13	193
Basidiospores	27	373	10579
Bipolaris/Dreschlera group	7	13	187
Botrytis sp.	7	13	293
Chaetomium sp.	7	13	201
Cladosporium sp.	27	427	7817
Curvularia sp.	7	40	1034
Epicoccum sp.	7	20	314
Nigrospora sp.	7	17	213
Oidium sp.	7	13	158
Penicillium/Aspergillus types	27	213	3675
Rusts	7	13	361
Smuts	7	40	680
Stachybotrys sp.	7	13	400
Torula sp.	7	13	141

Surface Swab Sampling

Sampling of surfaces was conducted to assess for the presence of fungi (mold) using collection swabs. The purpose of the sampling was to determine whether fungal (mold) structures were present on the material sampled and to identify the genus of fungi (mold) present. Swabs have a fibrous tip and sample collection included placing the swab tip onto the surface to remove any fungal structures that may be present. The swab is placed into a holding tube which contains a transport medium. The samples, once collected, were sent to an independent accredited laboratory under chain of custody. All samples were analyzed using brightfield microscopy. It must be noted sample collection must be completed alongside a visual assessment as the data alone cannot be relied upon solely.

Swab samples were collected from the air conditioner supply registers in rooms 442A, 401B and 442G. Fungal structures considered above background levels were detected in the air conditioner supply registers in rooms 442A and 442G belonging to the following genus/genera: Cladosporium sp.

Bulk Sampling for the Presence of Asbestos Fibers

Sampling of dust was conducted to assess for the presence of asbestos fibers in the dust present on the surfaces. The samples, once collected, were sent to an independent accredited laboratory under chain of custody. All samples were analyzed using Polarized Light Microscopy (PLM). Asbestos fibers were not identified in the sample collected.

6.0 Specifications for Mold Remediation (Protocol)

The following document is the Specifications for Mold Remediation developed from the site visit conducted at 675 West Call Street, Tallahassee, FL 32304. This document provides the guidelines that must be followed for the mold remediation portion of the project. The specifications are designed to provide guidelines for a scope of work that a contractor may follow during the remediation of the subject property. Guidance described in this document is provided for use in selecting a Florida licensed mold remediator who can effectively and safely implement mold remediation within the property.

Project Purpose and Objectives

The goal of the mold remediation project is to abate building materials that are water damaged and/or impacted by microbial matter, leaving the building in an acceptable condition and ready for build-back. The purpose of this specification document is to provide guidelines for the chosen remediation contractor to aid in the completion of the project in a safe, expedient and competent manner. Additionally, this document serves to outline the key elements associated with the scope of work. The efforts undertaken must be completed in a safe manner which will not cause additional contamination or exposure to others. This in conjunction with the correction of the conditions causing the problems will allow for the property to return to an acceptable state.

Scope

The scope of remediation work specified shall be completed by the selected remediation contractor.

The development of this Specifications for Mold Remediation document is consistent with the guidance provided by IICRC S520, Standard and Reference Guide for Professional Mold Remediation, USEPA Mold Remediation in Schools and Commercial Buildings guidelines and IICRC S500 Standard and Reference Guide for Professional Water Damage Restoration. As a result, the remediation activities shall comply with this specifications document, the guidance documents referenced above and where applicable, regulations of the US Occupational Safety and Health Administration (OSHA) Mold Remediation - Building Assessment, Restoration, and Demolition. Additionally, compliance with all applicable state regulations is required.

The selected remediation contractor will be responsible for providing all labor, equipment, and supplies necessary to complete the remediation as outlined below. The project intent is to correct all the building related issues relative to moisture and mold along with the remediation of the affected interior building materials. This document does not alleviate the contractor or other project representatives of their responsibilities to serve their positions with the highest level of professionalism nor does it intend to cover all aspects of the project. Each entity involved in the project is responsible for the work they conduct related to their area of expertise and this document is for guidance purposes to provide assistance.

Prior to commencing remediation, all issues should be identified and corrected. Containment is required in the rooms 214, 242-I, 242-F and 300-A.

Air filtration devices/scrubbers must be placed in the containments. Each containment area should be supplied with enough air filtration devices to maintain 4 air changes per hour. Air changes may be calculated by determining the air volume within the containment area and dividing by the flow rate at which the air filtration device filters the air. Each air filtration device should be the type typically utilized in the remediation and/or abatement industry, or equivalent.

The air filtration device shall be equipped with necessary pre-filters and HEPA filters to filter particulates from the air. Dehumidifiers must be placed in the containment(s).

Note that in the event visible damage or mold growth is observed beyond the areas listed in this report, removal of the affected materials must continue for a minimum of two linear feet beyond visible mold growth. HEPA vacuum clean and damp wipe any exposed wall cavities.

Remove any affected wallboard and baseboards that are visibly affected. Assess the conditions of any building materials behind the materials that require removing listed previously in this report. Assess wall cavities using a light source and mirror. In the event additional areas of contamination are identified, removal should continue until all areas are removed. Additionally, any exposed batt insulation that is affected should be removed. Conduct a visual inspection on any wood components present (studs, furring strips) and if it is affected, lightly sand and HEPA vacuum the wood framing. In the event this does not remove the mold growth, or the wood components are rotted, remove the affected wood materials. Note, assess whether the wood components have any structural significance to the building and if the potential exists, do not remove. Contact a qualified licensed structural engineer.

The carpets present should be cleaned in accordance with the IICRC S520. As directed in the standard most cleaning processes should begin and end with HEPA vacuuming. If concerns exist regarding the effectiveness of HEPA vacuuming, the carpet should be professionally cleaned in accordance with the IICRC S300 *"Standard and Reference Guide for Professional Upholstery Cleaning"*.

The HVAC (heating, ventilating, air conditioning) system must not operate in the containment during remediation.

The use of encapsulants and sealants is not encouraged but may be used in certain circumstances. Encapsulants and sealants used must be EPA registered and where possible clear when applied. In accordance with Florida law, the property owner and mold assessor should be notified with permission granted before application.

Note that Federal, State and local regulations may require asbestos testing prior to demolition of any materials that may be removed or disturbed during the remediation process.

Project Requirements

The remediation contractor chosen must be a qualified licensed mold remediation company meeting the requirements set forth by the state of Florida and have a current Mold-Related Services Remediator License for the state of Florida.

The remediation contractor shall provide all labor, materials, supervision, and necessary equipment to perform the work required. While the assessments of the building performed were intended to define the extent and severity of observable and accessible water damage and mold contamination within the property, some areas of mold growth may not have been discovered. In the course of any further inspections or remediation performed by the remediation contractor, any areas of water damage or suspected microbial contamination that were not discovered during earlier assessments, or that may have been initiated in the time since the last assessment, must be documented photographically and removed.

The remediation contractor is solely responsible for the protection of health, safety and the environment at the job site. The remediation contractor is solely responsible for all required training and licensure related to any work related to the mold remediation project. Health and safety standards must be followed at all times during the project. The U.S. Occupational Safety and Health Administration (OSHA) standards 29 CFR Parts 1910 and 1926 must be adhered to. The contractor must have an established and maintained respiratory protection program in place ensuring personal protective equipment is used during work practices.

The successful remediation contractor shall have on staff an individual that is licensed under and complies with the requirements of 2010 Florida Statute, Title XXXII, Chapter 468. The licensed remediation contractor must have proven experience handling projects of this size and complexity and must ensure safe completion of the work. The remediation contractor is responsible for all labor, supervision, and equipment to complete the project in the time frame agreed upon. The contractor must maintain constant surveillance of the project allocating responsibilities to qualified personnel only.

The remediation contractor and his/her designated "licensed, qualified personnel" must maintain all aspects of the remediation scope including but not limited to health and safety standards, worker training documentation, maintaining project timelines and implementing corrective actions if post remediation verification results are unfavorable. Additionally, the contractor will ensure all standards are maintained during containment structure and contaminated material disposal.

The licensed mold remediator shall designate a qualified licensed mold remediation project manager who will be responsible for project planning, executing and maintaining constant surveillance and direct supervision of the mold remediation work being performed. The remediation contractor shall staff the project accordingly to meet this responsibility given the proposed work schedule and scope. The project staff shall have received prior training related to but not limited to the removal, cleaning, sanitizing, demolition, or other treatment. The remediation contractor shall maintain current training documentation of all such on-site workers.

The remediation contractor shall assure significant on-site involvement by the licensed mold remediator. The duties of the remediation project manager will include, but are not limited to, the following:

- Verifying project accomplishments and observing completed or in process work for proper standard of care.
- Assessing conformance of constructed containment barrier systems and other engineering controls with the project specifications.
- Assessing the containment, handling and disposal of mold impacted building materials, cleaning supplies and other materials generated and used by the contractor to accomplish the work.
- Reviewing worker training records and health & safety program compliance.
- Reviewing the results of post remediation verification sample analyses.
- Performing spot checks for remediation quality assurance purposes.
- Being available "as needed" to assist with unexpected findings or changed conditions.

Post Remediation Clearance Criteria

At the conclusion of the remediation, AirMD Inc will perform a thorough visual assessment and document the assessment through photographs that will become part of the project record. Should areas of visible mold or water damage be noted during the assessment, the remediation contractor will be notified and will be required to address the identified areas. The assessment process will be repeated until all visual mold and/or water damage has been removed.

Post remediation clearance criteria for the remediation scope of work conducted shall be accomplished based on the following procedures: visual assessment of the work area(s), moisture mapping of the remaining building materials, and collection of ambient air samples.

The visual assessment is to verify that the containment remained constructed in a manner that prevented cross contamination during the demolition and cleaning phases, all of the affected materials have been removed and the remaining materials and containment areas are visibly free of visible mold and excess dust and debris.

The moisture assessment is to verify that all remaining building materials are dry and moisture intrusion is not occurring through the building envelope. Wet materials provide favorable conditions for mold growth and would indicate that the original source(s) of the problem was not corrected properly.

Air samples will be collected for microscopic analysis and will be sent to an independent accredited laboratory. The sample results must satisfy multiple criteria including the total indoor fugal counts, fungal counts relative to wet/damp indicator organisms (Stachybotrys sp., Chaetomium sp., Memnoniella sp.,) as well as other fungal genera.

The contractor's representative must contact AirMD prior to the remediation area's readiness for visual inspection and post-remediation sampling.

In accordance with Florida licensing statutes, the activities necessary to perform the cleaning and verification of cleanliness of the Heating, Ventilating and Air Conditioning system (HVAC) must be completed by a qualified licensed mechanical contractor. As a result of this, the cleanliness of the HVAC will not be included in the AirMD's post remediation assessment procedure. It is the responsibility of the remediation contractor to have this completed and documented by a qualified licensed mechanical contractor.

The remediation contractor shall re-clean and wipe down if the post remediation samples fail or if the final visual inspection fails. This process of re-cleaning and re-wiping shall continue until a successful post remediation is achieved. This section will not be applicable if there are special or unusual contamination conditions discovered during the remediation activities and AirMD is contacted and agrees in writing that this would substantially change the scope of work and affect post remediation testing.

Once all identified items have been successfully addressed, the remediation contractor shall demobilize from the site. All equipment, materials, and supplies utilized by the contractor during completion of this scope of work shall be removed from the building at the conclusion of remediation activities.

AirMD used its best professional judgment and followed industry standards in completing the project. The results are valid at the time of sample collection and do not guarantee that conditions in the future will not cause changes.

Sincerely,

Rachael Rupp
Senior Consultant
State of Florida Mold Assessor License: MRSA 2343

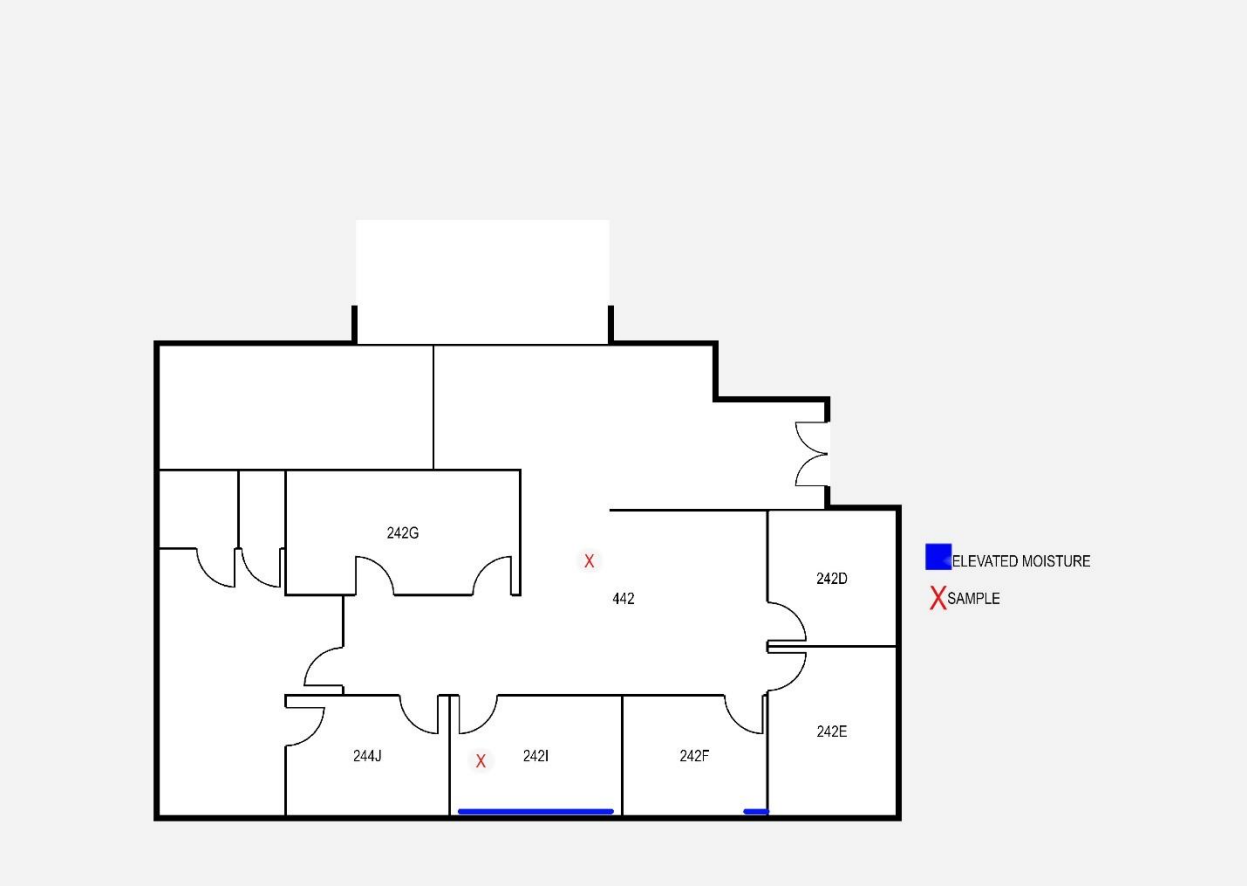
Limitations: AirMD's test results do not guarantee that the indoor environment is free from contaminates, gases, organisms or analytes sampled for. The customer understands that the there are limitations associated with the instrumentation used associated with accuracy, precision, and uncertainty. Additionally, further limitations are present because of sampling and measurement methods/procedures utilized in testing and measuring as well as any or all other factors such as environmental and climatic conditions. Control samples such as duplicates, blanks and comparison samples were all considered as part of the sampling plan and those implemented were based on the agreement with the client with considerations made relative to economic factors. The customer is aware that destructive testing was not performed and the customer understands that the assessment and testing/measurements completed, and the results generated as a result of the assessment and testing/measuring are representative of conditions found at the time and that conditions can change over time. Customer understands that the test results do not guarantee that the indoor environment is free from contaminates, gases, organisms or analytes sampled for. Customer herby acknowledges that microbiological growth reoccurs if the root cause or source of the growth is not remedied and that no investigation can absolutely rule out the existence of any microbiological growth at any given site. AirMD retains the right to supplement this report should additional information become available and/or further issues are discovered. AirMD reserves the right to assess the potential impact of the new information on the findings and to revise the report, if necessary, as warranted by the information or discovery. In some instances, as a service to the client, AirMD may provide advice with respect to selecting other such contractors and assistance in monitoring their performance. In no event will AirMD assume any liability or responsibility for the work performed by other contractors.

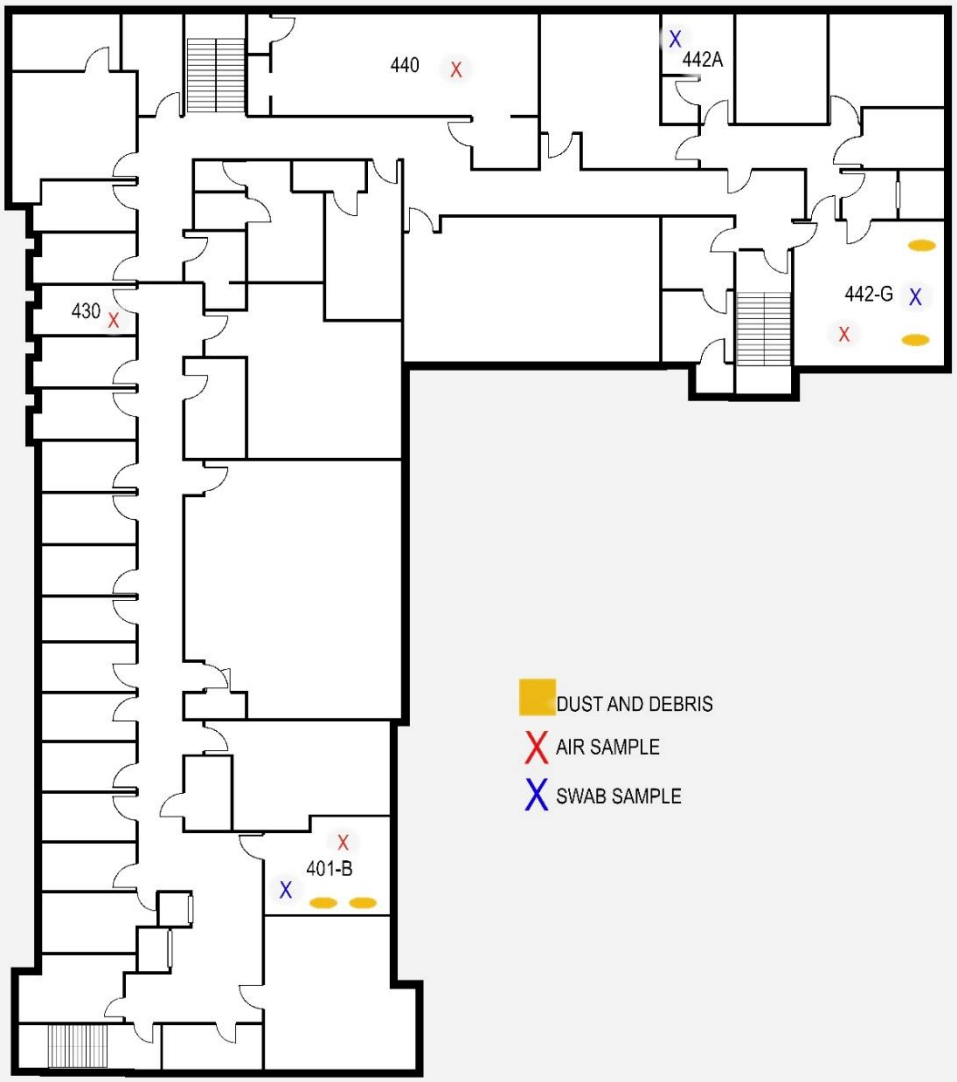
Customer understands that the testing/measuring or overall activities completed by AIRMD and their representatives does not generate or contribute to levels of contaminates, pollutants, toxins or hazardous substances. All reports, plans, specifications, computer files, field data, notes and other documents and instruments prepared by AirMD as instruments of service shall remain the property of AirMD. AirMD shall retain all common law, statutory and other reserved rights, including the copyright thereto. AirMD is not responsible for advising Client about its reporting obligations and Client agrees that it shall be responsible for all reporting, unless AirMD has an independent duty to report under applicable law. Except as otherwise specifically provided herein, AirMD makes no express or implied warranties or guarantees of any kind, including but not limited to any implied warranties of merchantability or fitness for a particular purpose, all of which are hereby expressly disclaimed. In no event shall AirMD be liable to Customer or any third party for any incidental, consequential indirect, special or punitive damages arising out of or in connection with the services to be performed by AirMD. In no event shall AirMD be liable to Customer or any third party for any amounts in excess of the amounts received by AirMD from Customer hereunder. For all other liabilities arising from or related to AirMD's services, AirMD's total obligation to client shall be to reperform its services that do not meet the standard of care related to the work scope completed.

AirMD's opinions as noted in the report are based on the findings and upon our professional experience with no warranty or guarantee implied. AirMD accepts no responsibility for interpretations or actions based on this report by others. The findings, results and conclusions as part of our assessment are only representative of conditions at the time of the AirMD visit and do not represent conditions at other times. This report is intended for your use only. Its data and content shall not be used or relied upon by other parties without prior written authorization of AirMD.

Appendix A

Floor Plans

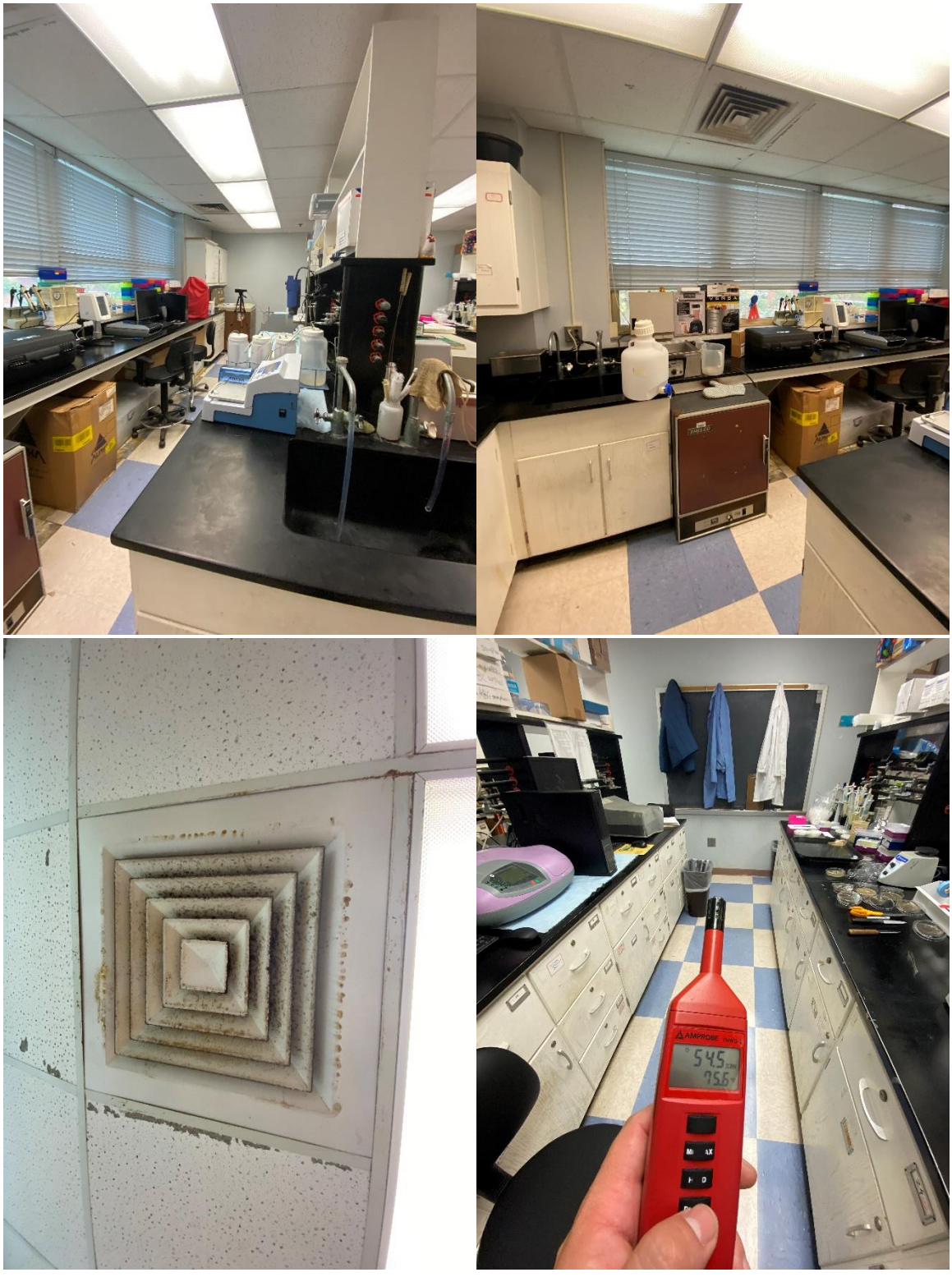


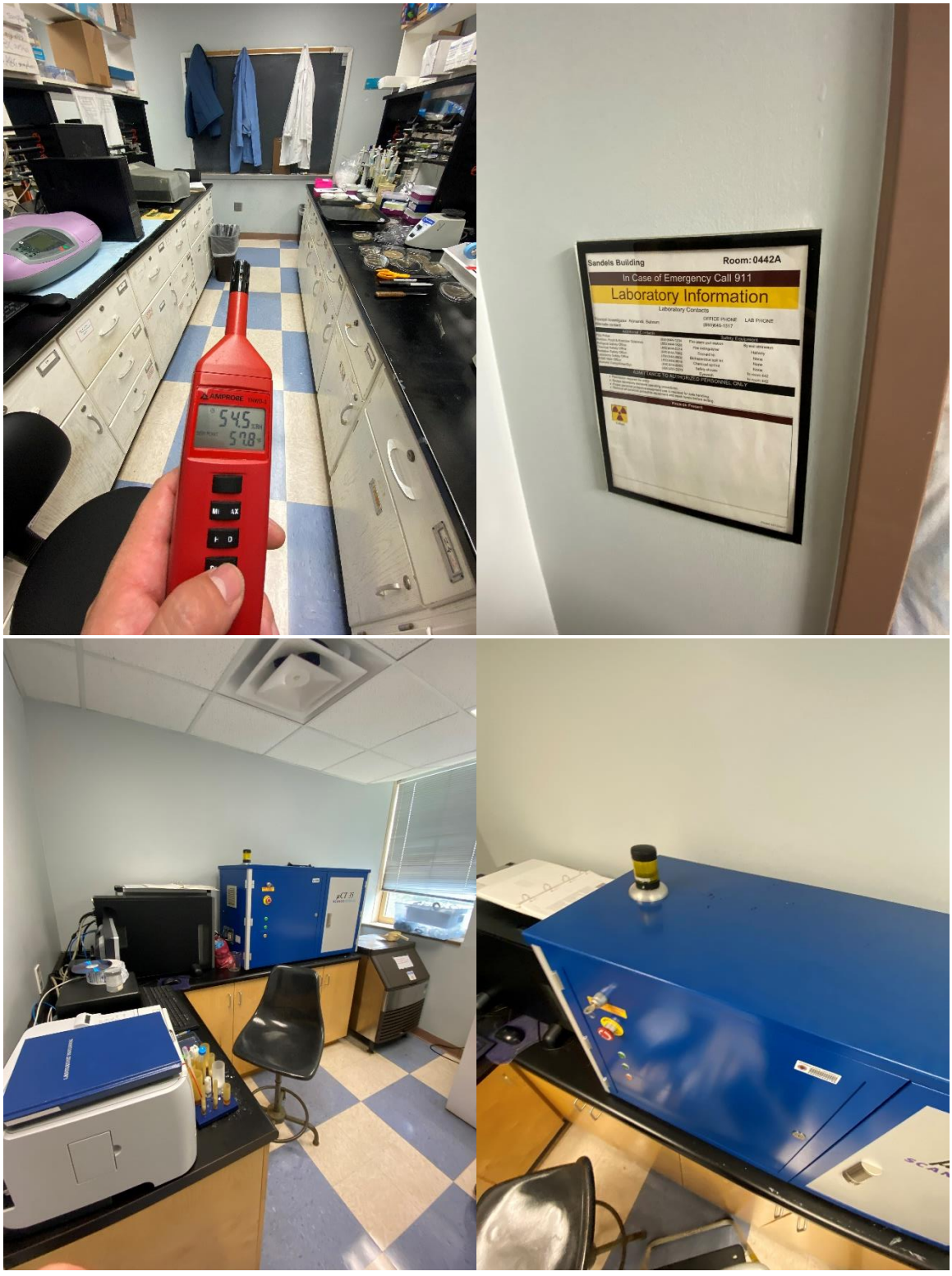


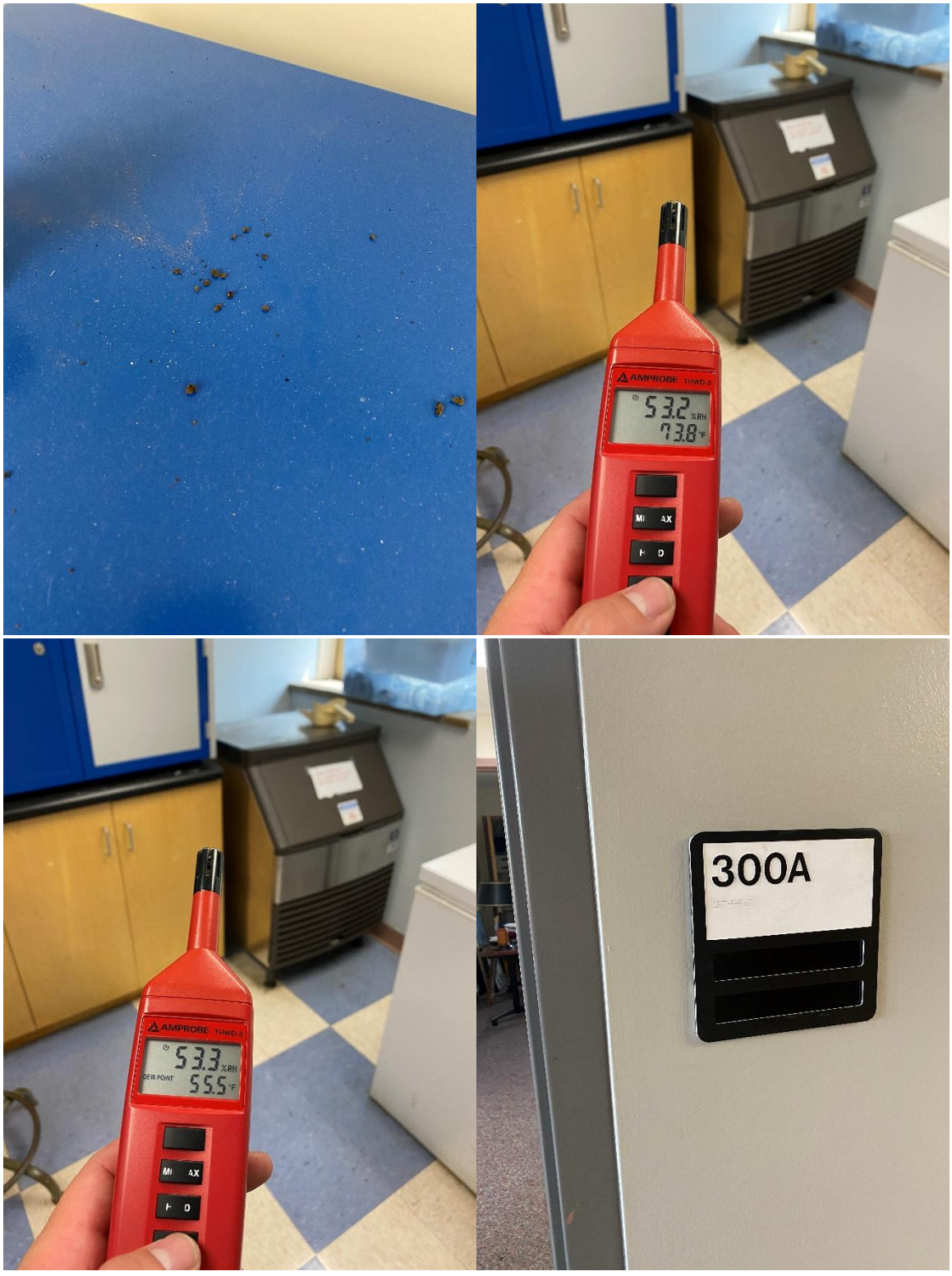
Appendix B

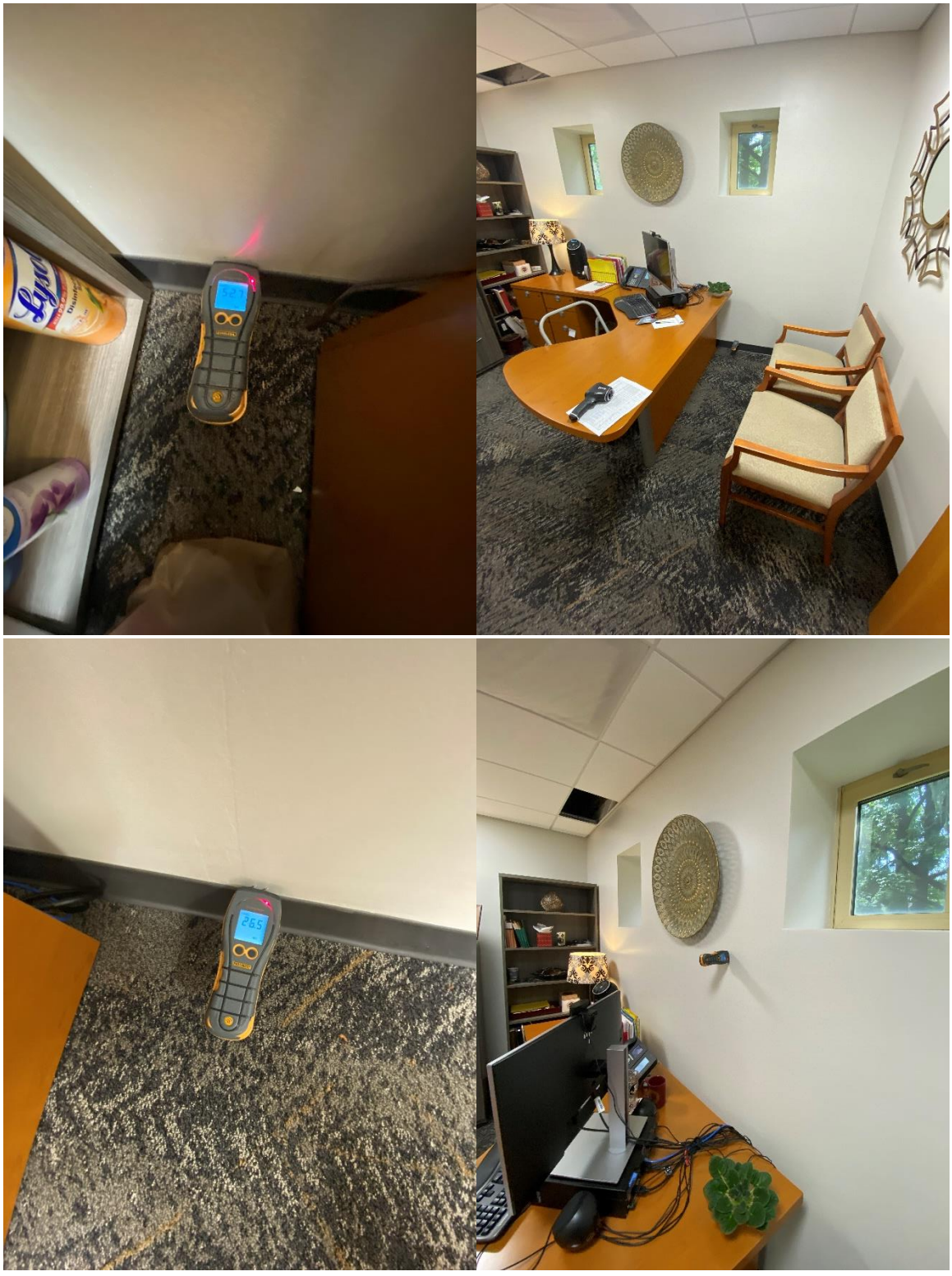
Photographic Documentation

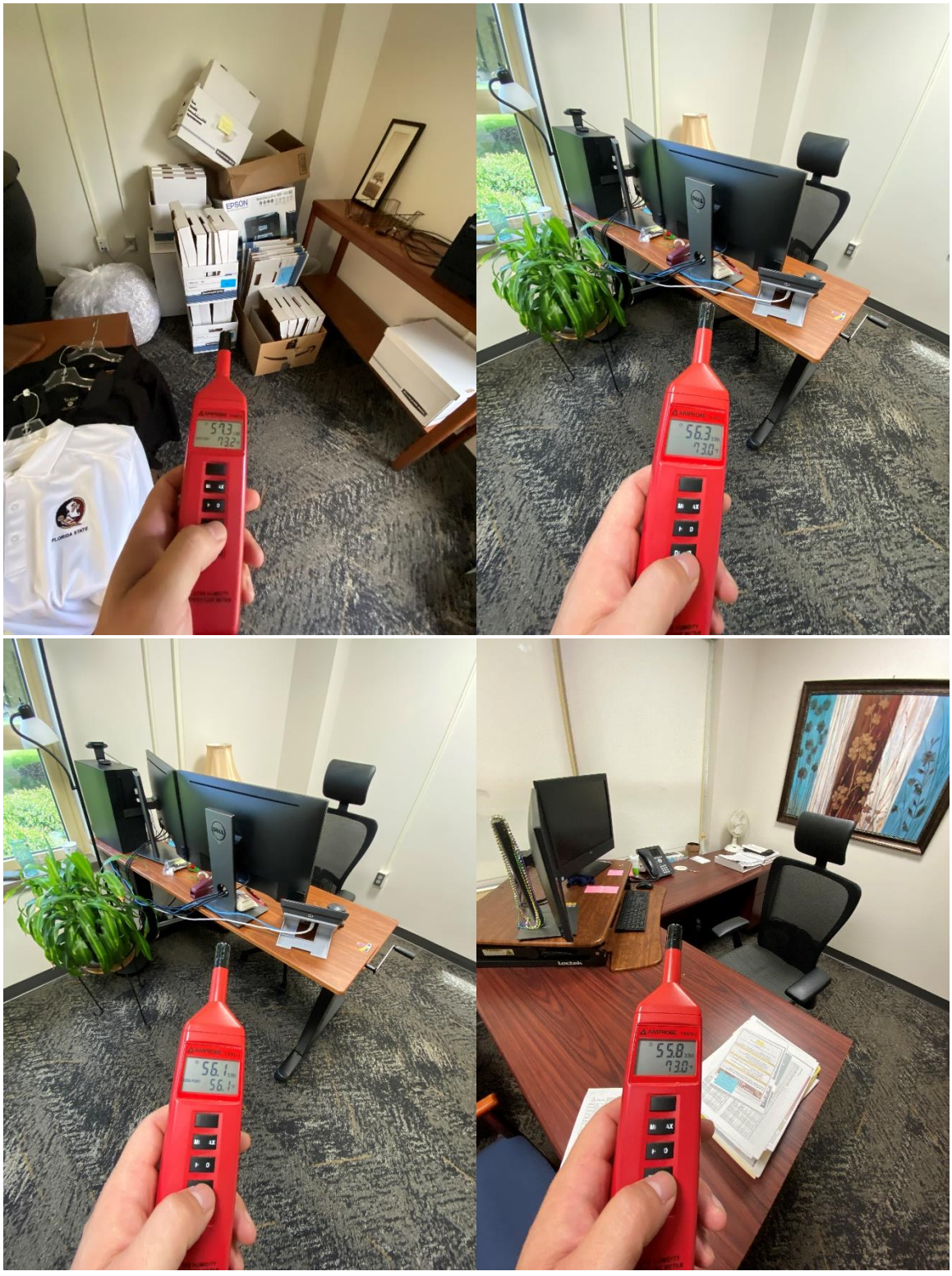
(Selection of relevant photos supplied, entire photo file for the project is available upon request)

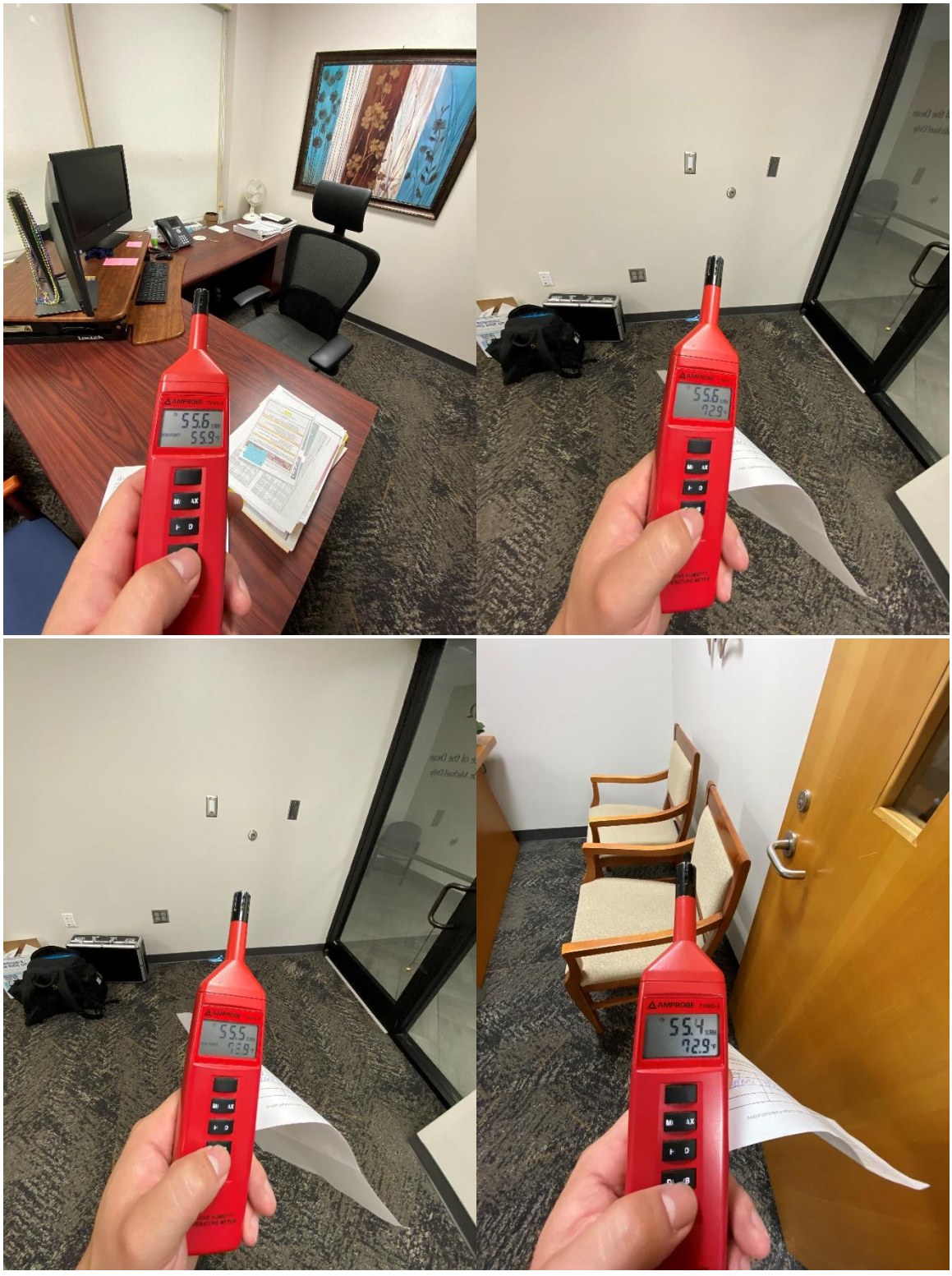


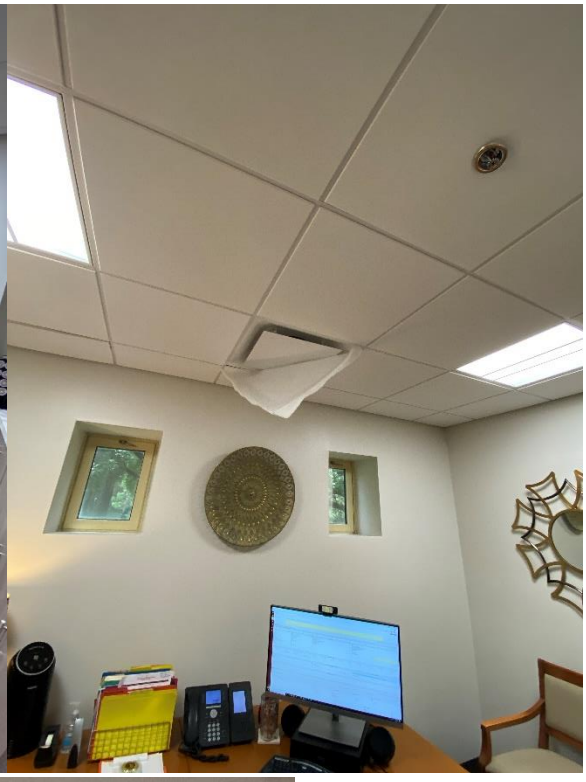












Appendix C

Laboratory Results

Simon Hahessy
AirMD
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(561) 245-4500

AEML, Inc.
601 E. Atlantic Blvd.
Pompano Beach, FL 33060
Phone: (954) 333-8149
Fax: (954) 333-8151
email: customerservice@aemlinc.com

Project: 21-02509-GT Florida State University Sandels

Batch: 331582

Sampled: 7/28/2021
Received: 7/30/2021
Analysis Date: 7/30/2021
Report Date: 7/30/2021

AEML Test: A001 Spore Trap Analysis

Sample ID:	331582-01	331582-02	331582-03	331582-04
Client Sample ID:	33051347 Room 214	33051364 Room 401-B	32736380 Room 430	33051355 Room 440
Volume Sampled (L):	75	75	75	75
Media:	Air-O-Cell	Air-O-Cell	Air-O-Cell	Air-O-Cell
Percent of Trace Analyzed:	100% at 600X Magnification	100% at 600X Magnification	100% at 600X Magnification	100% at 600X Magnification

Spore Types	**Raw Count**	**Count/m³**	**%**	**Raw Count**	**Count/m³**	**%**	**Raw Count**	**Count/m³**	**%**	**Raw Count**	**Count/m³**	**%**
Alternaria	—	—	—	—	—	—	—	—	—	—	—	—
Arthrinium	—	—	—	—	—	—	—	—	—	—	—	—
Ascospores	3	40	3	3	40	100	3	40	43	—	—	—
Aspergillus/Penicillium-Like	—	—	—	—	—	—	—	—	—	2	27	67
Basidiospores	1	13	1	—	—	—	—	—	—	—	—	—
Bipolaris/Dreschlera	—	—	—	—	—	—	—	—	—	—	—	—
Botrytis	—	—	—	—	—	—	—	—	—	—	—	—
Chaetomium	—	—	—	—	—	—	—	—	—	—	—	—
Cladosporium	112	1,493	95	—	—	—	3	40	43	—	—	—
Curvularia	1	13	1	—	—	—	—	—	—	1	13	33
Epicoccum	—	—	—	—	—	—	1	13	14	—	—	—
Fusarium	—	—	—	—	—	—	—	—	—	—	—	—
Ganoderma	—	—	—	—	—	—	—	—	—	—	—	—
Memnoniella	—	—	—	—	—	—	—	—	—	—	—	—
Nigrospora	1	13	1	—	—	—	—	—	—	—	—	—
Oidium/Peronospora	—	—	—	—	—	—	—	—	—	—	—	—
Pithomyces	—	—	—	—	—	—	—	—	—	—	—	—
Rust	—	—	—	—	—	—	—	—	—	—	—	—
Smut/Myxomyces/Periconia	—	—	—	—	—	—	—	—	—	—	—	—
Stachybotrys	—	—	—	—	—	—	—	—	—	—	—	—
Torula	—	—	—	—	—	—	—	—	—	—	—	—
Ulocladium	—	—	—	—	—	—	—	—	—	—	—	—
Unidentified Spores	—	—	—	—	—	—	—	—	—	—	—	—
Total Spores	**118**	**1,573**		**3**	**40**		**7**	**93**		**3**	**40**	
Hyphal Fragments	44	587		—	—		3	40		—	—	
Pollen	2	27		—	—		1	13		2	27	
Debris Rating	3			2			3			3		
Detection Limit	13			13			13			13		

Estimation performed due to high count.

Joshua Krinsky
Technical Director

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Project: 21-02509-GT Florida State University Sandels

Batch: 331582

Sampled: 7/28/2021
Received: 7/30/2021
Analysis Date: 7/30/2021
Report Date: 7/30/2021

AEML Test: A001 Spore Trap Analysis

Sample ID:	331582-05	331582-06	331582-07	331582-08
Client Sample ID:	32736389 Room 442G	32736387 Room 300A	32736382 Room 242I	32736375 Room 242
Volume Sampled (L):	75	75	75	75
Media:	Air-O-Cell	Air-O-Cell	Air-O-Cell	Air-O-Cell
Percent of Trace Analyzed:	100% at 600X Magnification	100% at 600X Magnification	100% at 600X Magnification	100% at 600X Magnification

Spore Types	Raw Count	Count/m³	%	Raw Count	Count/m³	%	Raw Count	Count/m³	%	Raw Count	Count/m³	%
Alternaria	—	—	—	—	—	—	—	—	—	1	13	13
Arthrinium	—	—	—	—	—	—	—	—	—	—	—	—
Ascospores	2	27	29	11	147	2	2	27	22	1	13	13
Aspergillus/Penicillium-Like	—	—	—	11	147	2	—	—	—	—	—	—
Basidiospores	4	53	57	—	—	—	—	—	—	—	—	—
Bipolaris/Dreschlera	—	—	—	—	—	—	—	—	—	—	—	—
Botrytis	—	—	—	—	—	—	—	—	—	—	—	—
Chaetomium	—	—	—	—	—	—	—	—	—	—	—	—
Cladosporium	1	13	14	513 #	6,840	94	2	27	22	4	53	50
Curvularia	—	—	—	5	67	1	2	27	22	2	27	25
Epicoccum	—	—	—	—	—	—	—	—	—	—	—	—
Fusarium	—	—	—	—	—	—	—	—	—	—	—	—
Ganoderma	—	—	—	1	13	<1	—	—	—	—	—	—
Memnoniella	—	—	—	—	—	—	—	—	—	—	—	—
Nigrospora	—	—	—	—	—	—	—	—	—	—	—	—
Oidium/Peronospora	—	—	—	—	—	—	—	—	—	—	—	—
Pithomyces	—	—	—	1	13	<1	1	13	11	—	—	—
Rust	—	—	—	—	—	—	—	—	—	—	—	—
Smut/Myxomyces/Periconia	—	—	—	2	27	<1	2	27	22	—	—	—
Stachybotrys	—	—	—	—	—	—	—	—	—	—	—	—
Torula	—	—	—	—	—	—	—	—	—	—	—	—
Ulocladium	—	—	—	—	—	—	—	—	—	—	—	—
Unidentified Spores	—	—	—	—	—	—	—	—	—	—	—	—
Total Spores	**7**	**93**		**544**	**7,253**		**9**	**120**		**8**	**107**	
Hyphal Fragments	—	—		1,404 #	18,720		1	13		7	93	
Pollen	—	—		2	27		—	—		—	—	
Debris Rating	2			3			3			3		
Detection Limit	13			13			13			13		

Estimation performed due to high count.

Joshua Krinsky
Technical Director

ACCREDITED TESTING CERT #2572.01

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email: customerservice@aemlinc.com

Project: 21-02509-GT Florida State University Sandels

Batch: 331582

Sampled: 7/28/2021
Received: 7/30/2021
Analysis Date: 7/30/2021
Report Date: 7/30/2021

AEML Test: A001 Spore Trap Analysis

Sample ID:	331582-09
Client Sample ID:	32736549 Outside
Volume Sampled (L):	75
Media:	Air-O-Cell
Percent of Trace Analyzed:	100% at 600X Magnification

Spore Types	Raw Count	Count/m³	%
Alternaria	—	—	—
Arthrinium	—	—	—
Ascospores	10	133	11
Aspergillus/Penicillium-Like	4	53	4
Basidiospores	3	40	3
Bipolaris/Dreschlera	—	—	—
Botrytis	—	—	—
Chaetomium	—	—	—
Cladosporium	62	827	67
Curvularia	2	27	2
Epicoccum	—	—	—
Fusarium	—	—	—
Ganoderma	1	13	1
Memnoniella	—	—	—
Nigrospora	—	—	—
Oidium/Peronospora	—	—	—
Pithomyces	—	—	—
Rust	—	—	—
Smut/Myxomyces/Periconia	8	107	9
Stachybotrys	—	—	—
Torula	3	40	3
Ulocladium	—	—	—
Unidentified Spores	—	—	—
Total Spores	**93**	**1,240**	
Hyphal Fragments	2	27	
Pollen	1	13	
Debris Rating	3		
Detection Limit	13		

Estimation performed due to high count.

Joshua Krinsky
Technical Director

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Project: 21-02509-GT Florida State University Sandels

Batch: 331582

Sampled: 7/28/2021
Received: 7/30/2021
Analysis Date: 7/30/2021
Report Date: 7/30/2021

AEML Test: S001 Swab Analysis

Sample ID:	331582-10	331582-11	331582-12*
Client Sample ID:	A1 Room 442 A	A2 401B	A3 442G
Area Swabbed (cm^2):	5	5	5
Media:	Swab	Swab	Swab
Sample Analysis:	Analyzed at 600X Magnification	Analyzed at 600X Magnification	Analyzed at 600X Magnification

Spore Types	Raw Count	Count/cm²	%	Raw Count	Count/cm²	%	Raw Count	Count/cm²	%
Alternaria	—	—	—	—	—	—	—	—	—
Arthrinium	—	—	—	—	—	—	—	—	—
Ascospores	—	—	—	—	—	—	50	400	13
Aspergillus/Penicillium-Like	—	—	—	4	32	10	28	224	7
Basidiospores	—	—	—	2	16	5	46	368	12
Bipolaris/Dreschlera	—	—	—	—	—	—	—	—	—
Botrytis	—	—	—	—	—	—	—	—	—
Chaetomium	—	—	—	—	—	—	—	—	—
Cladosporium	6,947	55,576	100	32	256	80	234	1,872	59
Curvularia	—	—	—	2	16	5	6	48	2
Epicoccum	—	—	—	—	—	—	—	—	—
Fusarium	—	—	—	—	—	—	—	—	—
Ganoderma	—	—	—	—	—	—	32	256	8
Memnoniella	—	—	—	—	—	—	—	—	—
Nigrospora	—	—	—	—	—	—	—	—	—
Oidium/Peronospora	—	—	—	—	—	—	—	—	—
Pithomyces	—	—	—	—	—	—	—	—	—
Rust	—	—	—	—	—	—	—	—	—
Smut/Myxomyces/Periconia	—	—	—	—	—	—	—	—	—
Stachybotrys	—	—	—	—	—	—	2	16	1
Torula	—	—	—	—	—	—	—	—	—
Ulocladium	—	—	—	—	—	—	—	—	—
Unidentified Spores	—	—	—	—	—	—	—	—	—
Total Spores	**6,947**	**55,576**		**40**	**320**		**398**	**3,184**	
Hyphal Fragments	848	6,784		8	64		16	128	
Detection Limit	94			16			16		

* Bacteria Present.

Joshua Krinsky
Technical Director

CA Labs
Dedicated to Quality

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12232 Industriplex, Suite 32
Baton Rouge, LA 70809
Phone 225-751-5632
Fax 225-751-5634

Materials Characterization - Bulk Asbestos Analysis

Laboratory Analysis Report - Polarized Light

Air MD
7700 Congress Ave, Suite 1119
Boca Raton, FL 33487

Customer Project: 2102509-G7 Florida State University
Reference #: CAL21077206RL Date: 07/30/21

Analysis and Method

Summary of polarized light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R-93 / 116 (Improved). The sample is first viewed with the aid of a stereomicroscope. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are preformed. Calibrated liquid refractive oils are used as liquid mouting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjugation with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 0.50% (well above the laboratory definition of trace).

Discussion

Vermiculite containing samples may contain trace amounts of actinolite/tremolite. When not detected by PLM, these samples should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may contain a regulated asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

Some samples (floor tiles, surfacings, etc.) may contain fibers too small to be detectable by PLM analysis and should be analyzed by TEM bulk protocols.

A "trace asbestos" will be reported if the analyst observes far less than 1% asbestos. CA Labs defines "trace asbestos" as a few fibers detected by the analyst in several preparations and will indicate as such under these circumstances.

Since allowable variation in quantification of samples close to 1% is high, <1% may be reported. Such results are ideal for point counting, and the technique is mandatory for friable samples (NESHAP, Nov. 1990 and clarification letter 8 May 1991) under 1% percent asbestos or "trace asbestos". **In order to make all initial PLM reports issued from CA Labs NESHAP compliant, all <1% asbestos results (except floor tiles) will be point counted at no additional charge.**

Qualifications

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). CA Labs is also accredited by AIHA LAP, LLC. in the PLM asbestos field of testing for Industrial Hygiene. All analysts have completed college courses or hold a degree in a natural science (geology, biology, or environmental science). Recognition by a state professional board in one these disciplines is preferred, but not required. Extensive in-house training programs are used to augment the educational background of the analyst. The Laboratory Director and Quality Manager have received supplemental McCrone Research training for asbestos identification. Analysis performed at Crisp Analytical Labs, LLC 1929 Old Denton Road Carrollton, TX 75006

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235
AIHA LAP, LLC Laboratory #102929

CA Labs
Dedicated to Quality

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12232 Industriplex, Suite 32
Baton Rouge, LA 70809
Phone 225-751-5632
Fax 225-751-5634

Overview of Project Sample Material Containing Asbestos

Customer Project: 2102509-G7 Florida State University **CA Labs Project #:** CAL21077206RL

Laboratory Sample ID	Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types
			No Asbestos Detected.		

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235
AIHA LAP, LLC Laboratory #102929

Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):

ca - carbonate
gypsum - gypsum
bi - binder
or - organic
ma - matrix
mi - mica
ve - vermiculite
ot - other
pe - perlite
qu - quartz
fg - fiberglass
mw - mineral wool
wo - wollastinite
ta - talc
sy - synthetic
ce - cellulose
br - brucite
ka - kaolin (clay)
pa - palygorskite (clay)

CA Labs
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Baton Rouge, LA 70809
Phone 225-751-5632
Fax 225-751-5634

Polarized Light Asbestiform Materials Characterization

Customer Info:
Air MD
7700 Congress Ave, Suite 1119
Boca Raton, FL 33487

Phone # 888-462-4763
Fax #

Attn:

Customer Project:
2102509-G7 Florida State University

Turnaround Time:
24 Hours

CA Labs Project #:
CAL21077206RL

Date: 7/30/2021
Samples Rec'd: 7/29/21 5:00pm
Date Of Sampling: 7/28/2021
Purchase Order #:

Laboratory Sample ID	Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
70007	A1		*1-1*	***Dust/debris**/ black felt*	*y*	***None Detected***	35% ce	65% qu,bi

Dallas NVLAP Lab Code 200349-0 TEM/PLM TCEQ# T104704513-15-3 TDH 30-0235

AIHA LAP, LLC Laboratory #102929

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116). *All samples received in good condition unless noted.*
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate	mi - mica	fg - fiberglass	ce - cellulose
gy - gypsum	ve - vermiculite	mw - mineral wool	br - brucite
bi - binder	ot -other	wo - wollastonite	ka - kaolin (clay)
or - organic	pe - perlite	ta - talc	pa - palygorskite (clay)
ma - matrix	qu - quartz	sy - synthetic	

Approved Signatories:

Aldwin Vasquez
Analyst

Julio Robles
Analyst

Technical Manager
Tanner Rasmussen

Senior Analyst
Julio Robles

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. Fire Damage no significant fiber damages effecting fibrous percentages
3. Actinolite in association with Vermiculite
4. Layer not analyzed - attached to previous positive layer and contamination is suspected
5. Not enough sample to analyze
6. Anthophyllite in association with Fibrous Talc
7. Contamination suspected from other building materials
8. Favorable scenario for water separation on vermiculite for possible analysis by another method
9. < 1% Result point counted positive
10. TEM analysis suggested

CA Labs

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Carrollton, TX 75006

Phone: 972-242-2754
Fax: 972-242-2798
Mobile: 469-222-6967

Chain of Custody

Client Name:	AirMD	**CA Labs Job #**	**CAL** 21077206
Client Address:	AirMD 7700 Congress Ave Suite 1119 Boca Raton, FL 33487	Billing Address: (if different)	
Phone Number:	561-245-4500	P.O. #:	
Fax Number:		**Project Name:**	FLORIDE STATE UNIVERSITY SANDELS.
Send Reports to:	labresults@airmd.com	**Project Number:**	21 02509 – G7

Contact: _____ Report Results: Via: Email X FAX Verbal

Total # Samples Submitted:	**Total # Samples to be Analyzed:**	**Material Matrix:** Air / Bulk / Water
1	1	Bulk

Please indicate appropriate turn around time.

Asbestos: *please call ahead for availability of all rush and/or after hours samples*

TEM	TA Time	PLM	TA Time	Optical / IAQ	TA Time
Circle analysis and select TA time		*Circle analysis and select TA time*	2 hour	**PCM**: NIOSH 7400	Note TAT
AHERA	4 hour	**EPA 600 XXXX**	4 hour	**Allergen Particle**:	24 hour
EPA Level II	8 hour		8 hour	tape/bulk/swab	2 days
Drinking Water	16 hour		16 hour	Cyclex-d cassettes	3 days
Wipe	24 hour	AHERA	24 hour	Air-o-cell cassettes	5 days
Micro-vac	2 days		2 days	Anderson cultures	Specify
NIOSH 7402	3 days	Point Count -	3 days	Bulk/swab cultures	Mold or
Chatfield Bulk	5 days	(NESHAPS)	5 days	Bacteria cultures	bacteria

Lead: ***Circle analysis and select TA time***

Matrix:	Paint Chips	Soil	Air	Wipes	Wastewater
TA Time:	8 hour	1 day	2 days	3 days	5 days

Sample Information:

Sample Number:	Sample Location:	Sample Description:	Sample Date/Time:
A1		BLACK DUST / DEBRIS	7/28/2021 12:30 PM

Custody Information:

Samples relinquished: _____ 7/28/2021 5:30pm
Signature / Date / Time

Samples received: _____
Signature / Date / Time

Samples relinquished: _____
Signature / Date / Time

Samples received: _____ 7.29.21 SPM
Signature / Date / Time

Appendix D

General Requirements for Remediation

The impacted areas of the building should be isolated using 6-mil polyethylene sheeting secured to building components with tape. The areas where the remedial work will occur is referred to as a containment. The contractor may divide the building into the number of containments they deem necessary to complete the scope of work. When establishing containment zones, consideration should be given to the route in which the removed material will be transported out of the building.

Each containment area should be supplied with enough air filtration devices to maintain 4 air changes per hour. Air changes may be calculated by determining the air volume within the containment area and dividing by the flow rate at which the air filtration device filters the air. Each air filtration device should be the type typically utilized in the remediation and/or abatement industry, or equivalent. The air filtration device shall be equipped with necessary pre-filters and HEPA filters to filter particulates from the air.

During the demolition phase the containments should be placed under negative pressure and ended prior to the final cleaning phase of the remediation activities. During final cleaning, the air filtration devices may be oriented to filter and recirculate the air within the containment. The air recirculate mode should operate for a minimum of 48-72 hours prior to conducting post remediation verification testing. If the project does not achieve clearance, the air scrubbers must remain and be operable until clearance is achieved.

Construction of the containments is the responsibility of the contractor. Erection of the containments will be completed to such a standard that it will withstand the pressures related to the workflow and airflow throughout the entire project.

In addition to the air filtration devices, the remediation contractor shall supply dehumidifier units to maintain humidity levels at 50% (+/-5%) in the building during the entire remediation process. If air conditioning is not supplied to the building during reconstruction, dehumidification efforts must be maintained during this project phase. Once the containments have been established, removal of the impacted materials shall commence.

The gypsum wallboard in the building that is wet, water damaged or has mold growth should be removed in accordance with mold removal and containment procedures generally used in the mold remediation industry. Care should be taken to minimize the disturbance of mold spores present on the materials removed from the building.

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Criteria for Remediation

The remediation contractor shall contain the areas where remedial activities will occur by isolating entrances with one layer of 6-mil thick polyethylene sheeting. The containment must be built using polyethylene sheeting of 6-mil thickness that is clear or opaque and moisture resistant duct tape and spray on glue capable of continuously sealing polyethylene through the project's remediation duration. If multiple containments are established, they must be isolated from each other using the polyethylene sheeting.

All openings between containment area(s) and adjacent area(s), including but not limited to windows, doorways, elevator openings, corridor entrances, ventilation openings, drains, ducts, grills, grates, diffusers, skylights, etc. shall be sealed. All cabinets, shelving etc, that have cracks, holes or other openings shall also be sealed. All movable objects shall be cleaned and removed from the containment area(s).

Where possible all HVAC equipment in or passing through any containment area shall be shut down, and preventative measures taken to prevent accidental start-ups. All intake and exhaust openings shall be sealed with at least one (1) layer of 6-mil polyethylene sheeting. The seals shall be installed in such a manner as to guarantee that the seals shall remain in place for the duration of the project.

Measures shall be taken to prevent aerosolized contaminants from escaping the work zones and into the HVAC systems of the property. The contained areas shall be placed under negative pressure containment during demolition to prevent migration of fungal contaminants into ducts or adjacent areas.

The containment shall be kept under negative pressure at all times during the demolition activities and for a time period after cessation of demolition that allows work area particulate levels in the air to return to background levels. Negative pressure shall be sufficient to prevent migration of particulate material out of the containment. Exhaust from the device(s) providing negative pressure shall be HEPA filtered and exhausted to the outdoors. The containment area exhaust plan will be modified to avoid and control depressurization and possible elevated interior humidity. The contractor shall demonstrate there is no bypass around the HEPA filter and that the filter provides HEPA performance. Containment areas shall maintain a negative pressurization with respect to adjoining areas of 5.0 Pa (0.02 in/water gauge) or greater during all work activities that may increase particulate concentrations. Negative pressurization shall be monitored and recorded using a device capable of measuring and recording containment depressurization, with a resolution of 1 Pa or less.

Air filtration devices shall be positioned within each containment and the air filtration devices shall be capable of producing 4 air exchanges per hour. After demolition and cleaning, air filtration can be changed from negative pressurization to recirculation. Distribute and isolate all air filtration devices throughout the affected areas. Ensure during the project that no old, contaminated or incorrectly installed filters are used to minimize post remediation testing failures or potentially cross contaminating other areas of the residence.

Air exhaust locations will be secured from criminal entry by using burglar bars or other satisfactory methods during the remediation process and protected against water intrusion during rainfall events. Provisions for make-up air should be made; dedicate a portion of a wall critical barrier for fresh make-up air. Ensure that each make-up air opening is adequately filtered. All filters shall be disposed of as contaminated waste material at the end of the project.

Ground Fault Circuit Interrupters (GFCI) are to be used on all electrical equipment within the containment. In areas where mold remediation activities are being conducted, air dehumidifiers should be utilized in a manner consistent with maintaining the relative humidity to approximately 50% (+/-5%) during the remediation/sanitization activities.

Dehumidification efforts should only cease when proper measures are in place that allow for proper temperature control and dehumidification to return to the building such as operating the air conditioning systems in the building. Dehumidification should allow for less than 14% moisture in all construction materials.

PVC or wood supporting frames shall be utilized if necessary to ensure that the containments remain intact during the entire remediation and post-remediation procedures.

Polyethylene bags of 6-mil thickness such as those used for asbestos-containing waste should be used to bag debris and waste. The designated onsite clean storage area must be outside.

Inlet openings on all vacuum collection devices and negative air machines shall be properly sealed during transport and when the equipment is not in use. Vacuum hose openings shall be sealed during transport outside of the work area. All areas should be cleaned and sanitized and new filters installed prior to beginning the project. All filters shall be disposed of as contaminated waste material at the end of this project.

HEPA vacuum flooring (carpet and/or hard floor) prior to the installation of the engineering control. Isolate all flooring (carpet and/or hard floor) with one layer of 6-millimeter polyethylene sheeting and seal with duct tape.

Interior surfaces of enclosure shall be wet-wiped or HEPA vacuumed before moving or dismantling the containment enclosure.

Removal

Upon adequate containment isolation, begin removal of the affected materials. In the event additional areas of contamination are identified, removal should continue until all areas are removed. Additionally, any exposed batt insulation that is affected should be removed. Conduct a visual inspection on any wood framing materials present and if they are affected removal should occur.

HEPA vacuum clean and wipe any exposed wall cavities. Once all the affected materials have been removed HEPA vacuum to remove remaining dust and debris from the containment. Additionally, wipe down the interior of the containment to remove any particulate matter that may statically bind to the walls of the containment.

Personnel Protection

The remediation contactor must utilize professional judgment regarding professional protection for restoration employees and follow all applicable standards and guidelines. The following information is for guidance purposes only:

- For areas of containment the use of gloves, disposable full body clothing, headgear, foot coverings, and full-face respirator with HEPA filter are required.
- Minimum Protection - half face HEPA filtered respirators, disposable suits, eye protection, gloves (e.g. polynitrile).
- Full Protection – full face HEPA filtered respirators or PAPR, full protective suits with head cover and foot covers, eye protection, gloves (e.g. polynitrile)
- The remediation contractor shall insure that OSHA appropriate personal protective equipment (PPE) is worn while remediation activities occur.
- Contractor assumes all responsibility for PPE compliance.

Remediation Contractor shall follow all of the requirements of 29 CFR 1910.120 (OSHA).

Before the project begins, the remediation contractor shall instruct workers on the potential health effects of mold and the need to use appropriate work procedures and personal protection when performing remedial techniques, including:

1. Use and fit of respirators.
2. Use of protective clothing.
3. Entry and exit from work areas.
4. Aspects of work procedures.
5. Protective measures.
6. Safety and emergency egress procedures.

Remediation Contractor shall provide workers with personally issued and marked respiratory protection equipment approved by National Institute for Occupational Safety and Health (NIOSH). As a minimum, respiratory protection during any disturbance of impacted components, shall consist of half-mask negative pressure air-purifying respirators equipped with HEPA oil proof (P100) cartridges. Disposable type dust masks are not allowed. All respiratory protection shall be provided in accordance with the remediation contractor's written respiratory protection program, which includes all applicable elements of the OSHA Respiratory Protection Standard.

Worker Certification

The remediation contractor must possess the following documents for all workers, including supervisory personnel, prior to start of project:

1. Current (within 1 year) physician's approval to wear a respirator.
2. Respirator fit test certification (within 1 year).
3. Documented mold awareness-training.

Protective Clothing

Remediation contractor shall provide workers with sufficient sets of protective disposable clothing, consisting of full-body coveralls, integral head/foot covers, and gloves in sizes to properly fit individual workers. All persons performing removal work shall don a layer of disposable clothing over street clothes or undergarments before entering the work area. Protective clothing shall be secured (for example, taped) to ensure that skin or street clothing is not exposed. The remediation contractor shall provide eye protection (for example, full-face respirator) and hard hats, as required by job conditions or by applicable safety regulations.

Decontamination Procedures

As described previously the remediation contractor shall ensure that each worker and authorized visitor dons respiratory protection and a layer of protective clothing (disposable coveralls, head covers, gloves, footwear) over street clothes or undergarments before entering active work areas. An active work area is defined as containment between the time in which removal of impacted material begins until the final detailed cleaning is completed. Workers and authorized visitors shall enter the work area only through a decontamination unit, which will be attached to the work area. The use of respiratory protection and protective clothing shall be required within active work areas during any potential disturbance of mold impacted components. The remediation contractor shall ensure that each worker and authorized visitor removes the layer of protective clothing and places it in an impermeable bag or container. Respirators shall be required to remain on until after the wearer exits the work area.

Remediation Contractor/Consultant Coordination

Coordination between AirMD's project manager and the remediation contractor's project manager is essential in achieving a complete, efficient and timely remediation project. The remediation contractor should immediately contact the AirMD project manager if any deviations from the scope occur including but not limited to:

- Additional water damage and/or mold amplification is encountered that may alter the scope of work.
- Wood components are encountered that remain blackened after repeated cleaning or appear to be rotted or in substantial decay. If removal of suspect materials substantially affects the scope of the work, then AirMD should be contacted immediately for resolution.
- Any time there is a concern regarding the containment area construction, extent of the demolition and/or the effectiveness of the sanitization process.

Appendix E

Standards and Reference Materials Utilized

Florida State Standards of Practice for Mold Assessors, FLDBPR

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USEPA March 2001, Mold Remediation in Schools and Commercial Buildings. E. P. Agency. Washington, D.C., United States Environmental Protection Agency.

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Kendrick, B, 2001, The Fifth Kingdom. Newburyport, Massachusetts, Focus Publishing.

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de Hoog, G. S., J. Guano, J. Gene, M. J. Figueras. Atlas of Clinical Fungi.

Deacon, J. (2006). Fungal Biology. Oxford, UK, Blackwell Publishing.

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The International Council for Research and Innovation in Building and Construction (CIB) International Society of Indoor Air Quality and Climate (ISIAQ) ISIAQ-CIB Task Group TG 42 "Performance criteria of buildings for health and comfort" CIB number 292, 2004

Rao, C.Y., Burge, H.A. and J.C.S. Chang. "Review of Quantitative Standards and Guidelines for Fungi in Indoor Air." Journal of Air and Waste Management Association. 46(1996): 899-908.

B Singh, J., ed. Building Mycology, Management of Decay and Health in Buildings. London: Chapman and Hall, 1994.

C Health Canada. "Fungal Contamination in Public Buildings: A Guide to Recognition and Management." Ontario: Health Canada, Federal-Provincial Committee on Environmental and Occupational Health. 1995.

D Robertson, L.D. "Monitoring Viable Fungal and Bacterial Bioaerosol Concentrations to Identify Acceptable Levels for Common Indoor Environments." Indoor Built Environments. 6(1997):295-300

E Godish, T. Indoor Environmental Quality. Boca Raton: CRC Press LLC, 2001.

F Clark, G. "Assessment and Sampling Approaches for Indoor Microbiological Assessments." American Industrial Hygiene Association (IAHA): The Synergist. Nov. 2001

Bradley, P., Weekes, J., and Miller, D. "Recognition, Evaluation and Control of Indoor Mold." American Industrial Hygiene Association (IAHA): 2008

Appendix 3

Report of water quality assessment by AIRMD

August 11, 2021

Nationwide Locations
Locally Served

Corporate Headquarters:
7700 Congress Avenue
Suite 1119
Boca Raton, FL 33487

AIRMD®
ENVIRONMENTAL CONSULTANTS

Water Quality Sampling

Florida State University – Sandels Building
675 West Call Street,
Tallahassee, FL 32304

Purchase Order:
FS22001764

Prepared For:
Florida State University – Sandels Building
675 West Call Street,
Tallahassee, FL 32304

Date: 8/11/21

AIRMD
ENVIRONMENTAL CONSULTANTS

Table of Contents

1.0 Executive Summary

AirMD is providing results to the client for the above referenced project. AirMD's objective was to conduct water quality sampling for the detection of Total coliforms, and E. coli, and evaluate the presence of Lead, Iron, Manganese, Nitrate, Nitrite, Turbidity, and pH. The project was requested as a result of building occupants want to assure there are no contaminants in the water. A site visit was completed on July 28, 2021. Sampling was conducted in the 4th floor kitchen and conference room. The information provided in this report is based upon the agreed scope relative to the reported issue(s)/claim.

The water sampling results identified that Coliforms, E. coli, Lead, Iron, Manganese, Nitrate, Nitrite and Turbidity were not present in the sample and the pH was within the federal limit. The chart in Section 4.0 of the report lists the laboratory results and comparison standards.

Drinking water regulations contain both a list of test parameters and accompanying maximum content levels (MCL). The test parameters will normally include parameters with health and/or aesthetic significance. If there is a MCL for a parameter which is not satisfied, treatment is typically required. If a parameter has a MCL, it is considered important enough to apply in the determination for treatment, whether health related or not.

Aesthetic parameters which are not satisfied will prohibit routine use of the water which can affect livability and pose health risks indirectly. Therefore, it is important to run all tests required and recommended by each local and State standard for private wells. If State or local standards are inadequate or non-existent, testing should be done in accordance with HUD's requirements which are based on EPA's Recommendation for private wells. MCL standards are applied at the drinking tap and dictate the need for treatment.

2.0 Introduction

The subject property is a university building of concrete construction with a flat roof system. In the areas assessed, split system air conditioners serve the structure and the interior walls are gypsum board while the ceilings are a combination of gypsum board and acoustic ceiling tiles. AirMD was retained to complete sampling based on building occupants want to assure there are no contaminants in the water. The agreed scope of work included collecting water quality samples. The agreed sampling areas included sampling of the 4th floor kitchen and conference room.

Note, the site visit did not include invasive testing and was specific to the scope of work described previously. Other environmental issues may exist, and areas of damage not related to the reported issue(s)/claim may also exist and are not covered under this scope of work.

The purpose of the report is to detail the findings and to present corrective measures if required based on the findings. It is very important that the necessary time be taken to read the report in its entirety.

3.0 Methodology

Water quality sampling and analysis were conducted in general accordance with Environmental Protection Agency (EPA) Method 200.8: Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma-Mass Spectrometry, EPA Method 300.0 determination of Inorganic Anions by Ion Chromatography, EPA 150.1 Method for pH, EPA Method 180.1: Determination of Turbidity by Nephelometry, and the EPA 9223B Standard Method for the Examination of Water and Wastewater. AirMD performed the following scope of work and sampling plan pursuant to discussions with the client(s) which included the following:

- Conduct a visual assessment of the sampling areas and conduct preparation procedures prior to sampling.
- Collect water quality samples using sterilized bottles of known size to collect the sample(s).
- Submit samples under chain of custody for analysis to EMSL Analytical, Inc located in Orlando, FL. The laboratory analyzed the samples using Inductively Coupled Plasma-Mass Spectrometry, Ion Chromatography, and Nephelometry.
- Interpret the analytical results. Compare the results to the Environmental Protection Agencies (EPA) maximum contaminant levels for drinking water.
- Provide a written summary of results report.

4.0 Results

Analyte	Method	Reporting Limit	Federal Limit	Result
Total Coliform	SM9223B	1 CFU/100mL	Absent	Absent
E. coli	SM9223B	1 CFU/100mL	Absent	Absent
Lead	EPA 200.8	0.0010 mg/L	0.015 mg/L	None Detected
Iron	EPA 200.8	0.10 mg/L	0.30 mg/L	None Detected
Manganese	EPA 200.8	0.0010 mg/L	0.050 mg/L	None Detected
Nitrate	EPA 300.0	0.50 mg/L	10 mg/L	None Detected
Nitrite	EPA 300.0	0.50 mg/L	1.0 mg/L	None Detected
Turbidity	EPA 180.1	0.30 NTU	1.0 NTU	None Detected
pH	EPA 150.1	N/A	6.5 - 8.5	7.63

The water sampling results identified that Coliforms, E. coli, Lead, Iron, Manganese, Nitrate, Nitrite and Turbidity were not present in the sample and the pH was within the federal limit.

AirMD used its best professional judgment and followed industry standards in completing the project. The results are valid at the time of sample collection and do not guarantee that conditions in the future will not cause changes.

Sincerely,

Rachael Rupp
Senior Consultant

Limitations: AirMD's test results do not guarantee that the indoor environment is free from contaminates, gases, organisms or analytes sampled for. The customer understands that the there are limitations associated with the instrumentation used associated with accuracy, precision, and uncertainty. Additionally, further limitations are present because of sampling and measurement methods/procedures utilized in testing and measuring as well as any or all other factors such as environmental and climatic conditions. Control samples such as duplicates, blanks and comparison samples were all considered as part of the sampling plan and those implemented were based on the agreement with the client with considerations made relative to economic factors. The customer is aware that destructive testing was not performed and the customer understands that the assessment and testing/measurements completed, and the results generated as a result of the assessment and testing/measuring are representative of conditions found at the time and that conditions can change over time. Customer understands that the test results do not guarantee that the indoor environment is free from contaminates, gases, organisms or analytes sampled for. Customer herby acknowledges that microbiological growth reoccurs if the root cause or source of the growth is not remedied and that no investigation can absolutely rule out the existence of any microbiological growth at any given site. AirMD retains the right to supplement this report should additional information become available and/or further issues are discovered. AirMD reserves the right to assess the potential impact of the new information on the findings and to revise the report, if necessary, as warranted by the information or discovery. In some instances, as a service to the client, AirMD may provide advice with respect to selecting other such contractors and assistance in monitoring their performance. In no event will AirMD assume any liability or responsibility for the work performed by other contractors.

Customer understands that the testing/measuring or overall activities completed by AIRMD and their representatives does not generate or contribute to levels of contaminates, pollutants, toxins or hazardous substances. All reports, plans, specifications, computer files, field data, notes and other documents and instruments prepared by AirMD as instruments of service shall remain the property of AirMD. AirMD shall retain all common law, statutory and other reserved rights, including the copyright thereto. AirMD is not responsible for advising Client about its reporting obligations and Client agrees that it shall be responsible for all reporting, unless AirMD has an independent duty to report under applicable law. Except as otherwise specifically provided herein, AirMD makes no express or implied warranties or guarantees of any kind, including but not limited to any implied warranties of merchantability or fitness for a particular purpose, all of which are hereby expressly disclaimed. In no event shall AirMD be liable to Customer or any third party for any incidental, consequential indirect, special or punitive damages arising out of or in connection with the services to be performed by AirMD. In no event shall AirMD be liable to Customer or any third party for any amounts in excess of the amounts received by AirMD from Customer hereunder. For all other liabilities arising from or related to AirMD's services, AirMD's total obligation to client shall be to reperform its services that do not meet the standard of care related to the work scope completed.

AirMD's opinions as noted in the report are based on the findings and upon our professional experience with no warranty or guarantee implied. AirMD accepts no responsibility for interpretations or actions based on this report by others. The findings, results and conclusions as part of our assessment are only representative of conditions at the time of the AirMD visit and do not represent conditions at other times. This report is intended for your use only. Its data and content shall not be used or relied upon by other parties without prior written authorization of AirMD.

Appendix A

Laboratory Results

EMSL ANALYTICAL, INC.
3303 Parkway Center Court
Orlando, FL 32808
Telephone: (407)599-5887 FAX: (407)599-9063
drinkingwaterlab@emsl.com | http://www.EMSL.com

EMSL ORDER ID: 342112173
EMSL CUSTOMER ID: ARMD45

Attention: Simon Hahessy
AirMD
7700 Congress Ave
Suite 1119
Boca Raton, FL 33487

Phone: 561-245-4500
Email: simon@airmd.com

Customer PO: 2102509
EMSL Project ID:
Project Name: Florida State University Sandels 2102509

Collected: 07/28/2021 13:00
Received: 07/29/2021 10:10
Analyzed: See Results
Reported: 8/2/2021

Laboratory Report
Analytical Results Detail
FHA/VA BasicPlus Water Panel

Sampling Site: 675 W Call St Tallahassee, FL 32304 Sandels Building | Room 2426 And

Drinking Water Kit Barcode: 01210012294

Analyte	Date/Time Analyzed	Method	Reporting Limit	Units	Federal Limit	Results	Indicator
Microorganisms							
Total Coliform	7/30/2021 11:20	SM 9223B	1 CFU/100mL	_	Absent	Absent	☑
E. coli	7/30/2021 11:20	SM 9223B	1 CFU/100mL	_	Absent	Absent	☑
Metals							
Lead	7/30/2021 16:07	EPA 200.8	0.0010	mg/L	0.015	ND	☑
Iron	7/30/2021 16:07	EPA 200.8	0.10	mg/L	0.30	ND	☑
Manganese	7/30/2021 16:07	EPA 200.8	0.0050	mg/L	0.050	ND	☑
Inorganic Analytes							
Nitrate	7/29/2021 16:38	EPA 300.0	0.40	mg/L	10	ND	☑
Nitrite	7/29/2021 16:38	EPA 300.0	0.40	mg/L	1.00	ND	☑
Physical Characteristics							
pH	7/29/2021 16:57	EPA 150.1	N/A	pH units	6.5 - 8.5	7.63	☑
Turbidity*	7/29/2021 16:31	EPA 180.1	0.30	NTU	1.00	ND	☑

Interpretation Key and Definitions

⊘ Result detected at, above, or outside federal limit

⚠ Result detected below federal limit and not an exceedance; however, source should be further investigated and possibly mitigated

☑ Result not detected; or detected at or below the laboratory reporting limit

Federal limit: The maximum contaminant level (MCL) that is allowed in drinking water
mg/L: Milligrams per liter or parts per million (ppm)
ND: Not detected

CFU: Colony forming units
NTU: Nephelometric turbidity units
* Interpretation is filtration system dependent

Report Date	Report Revision	Revision Comments
8/2/2021	R0	Initial Report

Carlos Rivadeneyra, Laboratory Director
or other approved signatory

Non- Conformance Comments
ΔThe sample was received outside of the method hold time for pH.
Microbiology sample date & time prepped 7/29/21 11:20AM. Date & time analyzed 7/30/21 11:20AM.

Sampling Site	Drinking Water Kit Barcode
675 W Call St Tallahassee, FL 32304 Sandels Building | Room 2426 And Ki	01210012294

Understanding Your FHA/VA BasicPlus Water Panel Results

Contaminated drinking water is one of the oldest known public health concerns. The fact that a water supply has been used for a prolonged amount of time without reported adverse health effects is not a guarantee of its safety. Regular users of a water supply can develop a tolerance for the contaminants present within their water supply while infrequent users may become sick by drinking the same water. This informational water quality testing report compares your sample results to national standards that are defined within the United States Environmental Protection Agency's (EPA) National Primary and Secondary Drinking Water Regulations. Federal public health goals as well as state, county, municipal, and local health department regulations may recommend stricter standards for the same target contaminants. Health effect information presented within this report was gathered from EPA resources. These test results are intended to be used for informational purposes only and are not intended to be used for state or regulatory compliance.

Microorganisms

The Coliform Test

A pathogen is a disease carrying organism. Many different pathogens could be present within a water system. It is not practical to test for all pathogens; therefore, the EPA requires testing for indicator organisms, or coliform bacteria. The standard bacteriological method for assessing the safety of water for domestic use is the coliform test. "Total coliforms" refer to a group of closely related bacteria that are generally harmless. They are natural and common inhabitants of surface waters, soil, and plants. Coliform bacteria are also found within the gut of warm-blooded animals, including humans. Their presence within your drinking water suggests that there has been a breach, a failure, or another change in the integrity of your water system which could allow other pathogens to enter into your drinking water. The absence of total coliform bacteria within a water system is used as the basis for considering water safe to drink.

The *Escherichia coli* (*E. coli*) Test

Fecal coliform bacteria are a subset of total coliform bacteria. *E. coli* belongs to the fecal coliform group. The presence of *E. coli* is a good indicator of fecal contamination and of the potential presence of other waterborne pathogens that are associated with human and animal fecal contamination. The absence of *E. coli* within a water system is used as the basis for considering water safe to drink.

Sampling Site	Drinking Water Kit Barcode
675 W Call St Tallahassee, FL 32304 Sandels Building | Room 2426 And Ki	01210012294

Metals

Lead

Materials that contain Lead have been commonly used in the construction of water supply distribution systems and plumbing systems in homes and commercial buildings. Lead is a heavy metal that has the potential to cause numerous adverse health effects in humans. The most significant and probable health effects associated with infants and children who drink water exceeding the action level are delays in their physical or mental development. Children can display attention span deficits and learning disabilities. Adults who consume contaminated water over many years can develop high blood pressure or kidney problems. Common sources of Lead contamination are household plumbing systems (service lines, pipes, brass and bronze fixtures, and solders and fluxes). The EPA has established an action level of 0.015 mg/L for Lead in drinking water.

Iron

The secondary, recommended maximum contaminant level for iron is 0.3 mg/L. The presence of iron within our drinking water can be attributed to two primary sources: natural geologic sources and aging/corroding water distribution systems and piping. Iron-based materials such as cast iron and galvanized steel have been widely used within our distribution systems and household plumbing. One of the most frequent consumer complaints about drinking water is discoloration. Iron quantities that exceed 0.3 mg/L in drinking water can cause an unpleasant metallic taste and a rusty color. Elevated levels of iron in drinking water can stain laundered items and plumbing fixtures, damage water equipment, and reduce the effectiveness of water treatment techniques for other contaminants. Iron is an essential mineral for human health in small concentrations. Ingestion of iron from drinking water is not directly associated with adverse health effects; however, trace impurities and microorganisms that are adsorbed by iron solids may pose human health concerns. Iron analysis performed by EPA 200.8, not EPA 200.7.

Manganese

The secondary, recommended maximum contaminant level for manganese is 0.05 mg/L. Manganese is a naturally-occurring element that is commonly found in soil, air, and water. Elevated levels of manganese in drinking water can stain laundered items and plumbing fixtures with a brownish color. Like iron, manganese is an essential nutrient for humans. Adverse health effects can be caused by inadequate intake or overexposure. The main route of human exposure to manganese is ingestion of food. Manganese ingestion from drinking water is normally substantially lower when compared to manganese ingestion from food. The health effects from over-exposure to manganese are dependent upon several factors, including: the route of exposure, the chemical form, the age at exposure, and an individual's nutritional status. The nervous system has been determined to be the primary target. Many of the reports of human adverse effects from manganese exposure are cited from inhalation exposure in occupational settings. While there are substantial data supporting the neurological effects of inhaled manganese in both humans and animals, there are few data that support the association between oral exposure to manganese and toxic effects.

Sampling Site	Drinking Water Kit Barcode
675 W Call St Tallahassee, FL 32304 Sandels Building | Room 2426 And Ki	01210012294

Inorganic Chemicals

Nitrate/Nitrite

Nitrates and nitrites are nitrogen-oxygen chemical units which combine with various organic and inorganic compounds. Nitrates occur naturally in mineral deposits, soils, seawater and freshwater systems, the atmosphere, and in regional plant life. Nitrates are most commonly used as a fertilizer. Once nitrates are consumed, they are converted to nitrites. The toxicity of nitrate in humans is due to the body's reduction of nitrate to nitrite. Infants younger than six months of age who drink water containing nitrate in excess of the maximum contaminant level can become seriously ill. These illness symptoms include shortness of breath and Blue Baby Syndrome. If infants become ill and they do not receive treatment, their sickness can become fatal. Major sources of nitrate in drinking water include fertilizer run-off, leaching from septic tanks (sewage), and erosion of natural deposits. The EPA has set an enforceable regulation for nitrate at 10 mg/L and for nitrite at 1 mg/L.

Physical Factors

pH

pH is a numerical expression indicating the degree to which water is acidic or alkaline. pH is represented on a scale of 0 to 14 with 0 being the most acidic, 14 the most alkaline, and 7 being neutral. The secondary, recommended maximum contaminant level range for pH is 6.5 to 8.5. Both low and high pH levels are deemed undesirable due to the effects upon both water systems and taste. Low pH (acidic) levels can have a corrosive effect on metal plumbing and fixtures and can also cause Lead leaching from pipe solder and brass plumbing fixtures. Metallic taste is frequently associated with acidic water while a bitter taste may be associated with alkaline (high pH) water. High pH levels reduce the effectiveness of chlorine disinfection. High degrees of mineralization are also associated with alkaline water which leads to encrustation of water supply lines.

Turbidity

Turbidity is a measure of water clarity and it is an expression of the optical property of a water sample which causes light to be scattered and absorbed rather than passing straight through a sample. Turbidity is caused by the presence of dissolved and/or suspended matter such as microscopic organisms, soil particles (clay, silt, and sand), and other fine particles of both organic and inorganic matter. As the number of particles increase, more light is scattered and absorbed, and turbidity increases. Turbidity is used to indicate water quality and filtration effectiveness. Higher turbidity levels are often associated with higher levels of disease-causing microorganisms such as viruses, parasites, and some bacteria. Turbidity readings are expressed as nephelometric turbidity units (NTU). For water systems using conventional or direct filtration methods, turbidity cannot exceed 1.0 NTU; turbidity must be less than or equal to 0.3 NTU in at least 95 percent of samples collected within any month. Systems that use filtration other than conventional or direct filtration must follow state limits, which at no time may exceed 5.0 NTU.

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National Primary Drinking Water Regulations

Microorganisms

Contaminant	MCL[1] or TT[1] (mg/L)[2]
Cryptosporidium	TT[7]
Fecal coliform and *E. coli*	MCL[6]
Giardia lamblia	TT[7]
Heterotrophic plate count (HPC)	TT[7]
Legionella	TT[7]
Total Coliforms	5.0%[8]
Turbidity	TT[7]
Viruses (enteric)	TT[7]

Disinfection Byproducts

Contaminant	MCL[1] or TT[1] (mg/L)[2]
Bromate	0.010
Chlorite	1.0
Haloacetic acids (HAAs)	0.060
Total Trihalomethanes (TTHMs)	0.080

Inorganic Chemicals

Contaminant	MCL[1] or TT[1] (mg/L)[2]
Antimony	0.006
Arsenic	0.010
Asbestos (fibers > 10 micrometers)	7 million fibers per liter (MFL)
Barium	2.0
Beryllium	0.004
Cadmium	0.005
Chromium (total)	0.1
Copper	TT[5]; Action level = 1.3
Cyanide (as free cyanide)	0.2
Fluoride	4.0
Lead	TT[5]; Action level = 0.015
Mercury (inorganic)	0.002
Nitrate (measured as Nitrogen)	10.0
Nitrite (measured as Nitrogen)	1.0
Selenium	0.05
Thallium	0.002

Disinfectants

Contaminant	MCL[1] or TT[1] (mg/L)[2]
Chloramines (as Cl_2)	MRDL=4.0[1]
Chlorine (as Cl_2)	MRDL=4.0[1]
Chlorine dioxide (as ClO_2)	MRDL=0.8[1]

Radionuclides

Contaminant	MCL[1] or TT[1] (mg/L)[2]
Alpha photon emitters	15 picocuries per liter (pCi/L)
Beta photon emitters	4 millirems per year
Radium ^{226} and Radium ^{228} (combined)	5 pCi/L
Uranium	30 ug/L

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National Primary Drinking Water Regulations

Organic Chemicals

Contaminant	MCL[1] or TT[1] (mg/L)[2]
Acrylamide	TT[4]
Alachlor	0.002
Atrazine	0.003
Benzene	0.005
Benzo(a)pyrene (PAHs)	0.0002
Carbofuran	0.04
Carbon tetrachloride	0.005
Chlordane	0.002
Chlorobenzene	0.1
2,4-D	0.07
Dalapon	0.2
1,2-Dibromo-3-chloropropane (DBCP)	0.0002
o-Dichlorobenzene	0.6
p-Dichlorobenzene	0.075
1,2-Dichloroethane	0.005
1,1-Dichloroethylene	0.007
cis-1,2-Dichloroethylene	0.07
trans-1,2-Dichloroethylene	0.1

Contaminant	MCL[1] or TT[1] (mg/L)[2]
Dichloromethane	0.005
1,2-Dichloropropane	0.005
Di(2-ethylhexyl) adipate	0.4
Di(2-ethylhexyl) phthalate	0.006
Dinoseb	0.007
Dioxin (2,3,7,8-TCDD)	0.00000003
Diquat	0.02
Endothall	0.1
Endrin	0.002
Epichlorohydrin	TT[4]
Ethylbenzene	0.7
Ethylene dibromide	0.00005
Glyphosate	0.7
Heptachlor	0.0004
Heptachlor epoxide	0.0002
Hexachlorobenzene	0.001
Hexachlorocyclo-pentadiene	0.05

Contaminant	MCL[1] or TT[1] (mg/L)[2]
Lindane	0.0002
Methoxychlor	0.04
Oxamyl (Vydate)	0.2
Pentachlorophenol	0.001
Picloram	0.5
Polychlorinated biphenyls (PCBs)	0.0005
Simazine	0.004
Styrene	0.1
Tetrachloroethylene	0.005
Toluene	1.0
Toxaphene	0.003
2,4,5-TP (Silvex)	0.05
1,2,4-Trichlorobenzene	0.07
1,1,1-Trichloroethane	0.2
1,1,2-Trichloroethane	0.005
Trichloroethylene	0.005
Vinyl chloride	0.002
Xylenes (total)	10

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National Primary Drinking Water Regulations

Notes

1 Definitions:
Maximum Contaminant Level Goal (MCLG)—The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety and are non-enforceable public health goals.
Maximum Contaminant Level (MCL)—The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology and taking cost into consideration. MCLs are enforceable standards.
Maximum Residual Disinfectant Level Goal (MRDLG)—The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
Maximum Residual Disinfectant Level (MRDL)—The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microboal contaminants.
Treatment Technique (TT)—A required process intended to reduce the level of a contaminant in drinking water.
2 Units are in milligrams per liter (mg/L) unless otherwise noted. Milligrams per liter are equivalent to parts per million (ppm).
3 Health effects are from long-term exposure unless specified as short-term exposure.
4 Each water system must certify annually, in writing, to the state (using third-party or manufacturers certification) that when it uses acrylamide and/or epichlorohydrin to treat water, the combination (or product) of dose and monomer level does not exceed the levels specified, as follows: Acrylamide = 0.05 percent dosed at 1 mg/L (or equivalent); Epichlorohydrin = 0.01 percent dosed at 20 mg/L (or equivalent).
5 Lead and copper are regulated by a Treatment Technique that requires systems to control the corrosiveness of their water. If more than 10 percent of tap water samples exceed the action level, water systems must take additional steps. For copper, the action level is 1.3 mg/L, and for lead is 0.015 mg/L.
6 A routine sample that is fecal coliform-positive or *E. coli*-positive triggers repeat samples - if any repeat sample is total coliform-positive, the system has an acute MCL violation. A routine sample that is total coliform-positive and fecal coliform-negative or *E. coli*-negative triggers repeat samples - if any repeat sample is fecal coliform-positive or *E. coli*-positive, the system has an acute MCL violation. See also Total Coliforms.
7 EPA's surface water treatment rules require systems using surface water or ground water under the direct influence of surface water to (1) disinfect their water, and (2) filter their water or meet criteria for avoiding filtration so that the following contaminants are controlled at the following levels:
• *Cryptosporidium*: 99 percent removal for systems that filter. Unfiltered systems are required to include *Cryptosporidium* in their existing watershed control provisions.
• *Giardia lamblia:* 99.9 percent removal/inactivation
• Viruses: 99.99 percent removal/inactivation
• *Legionella*: No limit, but EPA believes that if *Giardia* and viruses are removed/inactivated according to the treatment techniques in the surface water treatment rule, *Legionella* will also be controlled.
• Turbidity: For systems that use conventional or direct filtration, at no time can turbidity (cloudiness of water) go higher than 1 nephelolometric turbidity unit (NTU), and samples for turbidity must be less than or equal to 0.3 NTU in at least 95 percent of the samples in any month. Systems that use filtration other than conventional or direct filtration must follow state limits, which must include turbidity at no time exceeding 5 NTU.
• HPC: No more than 500 bacterial colonies per milliliter
• Long Term 1 Enhanced Surface Water Treatment; Surface water systems or ground water systems under the direct influence of surface water serving fewer than 10,000 people must comply with the applicable Long Term 1 Enhanced Surface Water Treatment Rule provisions (e.g. turbidity standards, individual filter monitoring, *Cryptosporidium* removal requirements, updated watershed control requirements for unfiltered systems).
• Long Term 2 Enhanced Surface Water Treatment; This rule applies to all surface water systems or ground water systems under the direct influence of surface water. The rule targets additional *Cryptosporidium* treatment requirements for higher risk systems and includes provisions to reduce risks from uncovered finished water storages facilities and to ensure that the systems maintain microbial protection as they take steps to reduce the formation of disinfection byproducts. (Monitoring start dates are staggered by system size. The largest systems (serving at least 100,000 people) will begin monitoring in October 2006 and the smallest systems (serving fewer than 10,000 people) will not begin monitoring until October 2008. After completing monitoring and determining their treatment bin, systems generally have three years to comply with any additional treatment requirements.)
• Filter Backwash Recycling: The Filter Backwash Recycling Rule requires systems that recycle to return specific recycle flows through all processes of the system's existing conventional or direct filtration system or at an alternate location approved by the state.
8 No more than 5.0 percent samples total coliform-positive in a month. (For water systems that collect fewer than 40 routine samples per month, no more than one sample can be total coliform-positive per month.) Every sample that has total coliform must be analyzed for either fecal coliforms or *E. coli*. If two consecutive TC-positive samples, and one is also positive for *E. coli* or fecal coliforms, system has an acute MCL violation.
9 Although there is no collective MCLG for this contaminant group, there are individual MCLGs for some of the individual contaminants:
• Haloacetic acids: dichloroacetic acid (zero); trichloroacetic acid (0.3 mg/L)
• Trihalomethanes: bromodichloromethane (zero); bromoform (zero); dibromochloromethane (0.06 mg/L)

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National Primary Drinking Water Regulations

National Secondary Drinking Water Regulations are non-enforceable guidelines regarding contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. The EPA recommends secondary standards to water systems but does not require systems to comply. However, some states may choose to adopt them as enforceable standards.

Contaminant	Secondary Maximum Contaminant Level
Aluminum	0.05 to 0.2 mg/L
Chloride	250 mg/L
Color	15 (color units)
Copper	1.0 mg/L
Corrosivity	noncorrosive
Fluoride	2.0 mg/L
Foaming Agents	0.5 mg/L
Iron	0.3 mg/L
Manganese	0.05 mg/L
Odor	3 threshold odor number
pH	6.5-8.5
Silver	0.10 mg/L
Sulfate	250 mg/L
Total Dissolved Solids	500 mg/L
Zinc	5 mg/L

For a current list of the EPA's National Primary and Secondary Drinking Water Regulations, please visit http://water.epa.gov/drink/contaminants/upload/mcl-2.pdf. Federal public health goals as well as state, county, municipal, and local health department regulations may recommend stricter standards for the same target analyte.

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Consumer Links:

EPA United States Environmental Protection Agency

EPA Primary and Secondary Drinking Water Regulations
http://water.epa.gov/drink/contaminants/upload/mcl-2.pdf

Ground Water and Drinking Water
http://water.epa.gov/drink/index.cfm

Drinking Water Contaminants
http://water.epa.gov/drink/contaminants/index.cfm

Basic Information about Pathogens and Indicators in Drinking Water
http://water.epa.gov/drink/contaminants/basicinformation/pathogens.cfm

Private Drinking Water Wells
http://water.epa.gov/drink/info/well/index.cfm

Standards & Risk Management
http://water.epa.gov/drink/standardsriskmanagement.cfm

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Description of Analysis

Analytical Laboratory:

EMSL Analytical, Inc., (EMSL) is a national network of laboratories located in key cities throughout the USA and Canada. Established in 1981, the company has expanded its analytical services and capabilities and now operates more than thirty lab locations, all striving for excellence in providing quality laboratory services in a timely and cost competitive manner.

Our diverse staff of over 500 employees includes a wide range of expertise, educational background, and experience. These dedicated and capable employees follow the lead and standard of care demonstrated by the owner and founder of the company, Dr. Peter Frasca, who, as a hands on owner, maintains daily involvement in our laboratory operations, and dictates that our work is consistent with his EMSL Diamond Standard. This "Diamond Standard" includes the following:

- Quality Data - Strict adherence to our quality programs and regulatory requirements which comply with the ISO 17025 guidelines so that our data is tracked, managed, reported, and verified to be accurate and reliable.
- Customer Dedication - We strive to create lasting, mutually beneficial relationships with all clients. We solicit feedback from our clients and we are committed to responding quickly to any questions or concerns that may arise before, during, or after an assignment.
- Analytical Expertise - We employ highly qualified and experienced chemists, geologists, physicists, mycologists, microbiologists, biologists, materials scientists, and industrial hygienists to enhance our analytical abilities and expertise.
- Integrity and Ethics - We insist that our employees uphold the highest ethics and standards. We maintain a "no compromise" policy as it pertains to any ethical issue.
- Responsiveness - We recognize that the timeliness of a report is as important as the quality of the data. We will not however, allow deadlines or the rush needs of a project to adversely impact our quality objectives.
- Technology - We recognize the importance of new technology to better enable us to provide improved service. LabConnect™ access to your data, customized reports, Laboratory Information Management Systems, and analytical instrumentation are continuously upgraded to enable continuous improvement of our service and capabilities.
- Value - We believe that a business relationship with EMSL provides you with an excellent value. We provide you with a complete value package that includes all components of the EMSL Diamond Standard.

LOCALLY FOCUSED, NATIONALLY RECOGNIZED

UNMATCHED CAPACITY FROM OUR COLLECTIVE STRENGTH OF NATIONWIDE LOCATIONS

EMSL Analytical, Inc. has been fortunate to be able to maintain a solid history of stable growth and viability for the past thirty years with a current network consisting of greater than thirty laboratories and service centers.

For a complete list of analytical services offered, please contact EMSL Analytical, Inc. at (800) 220-3675.

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Important Terms, Conditions, and Limitations

A. General Customer Requirements

The customer is responsible for confirming and communicating any specific local, state, regional, national, or independent third party certification and accreditation requirements applicable to sample submission. The customer is responsible for communicating any specific test requirements. EMSL Analytical, Inc. (EMSL) is not responsible for customer's errors or omissions with respect to communication of specific test requirements.

B. Sample Submission

The receipt of a Chain of Custody (COC) document shall be considered the customer's formal notice to proceed with the stated transaction in accordance with EMSL Terms and Conditions. In the absence of an additional contract or agreement with EMSL, by submitting samples for analysis, the customer agrees to be bound by EMSL's Terms and Conditions. Where applicable, samples shall be logged in and charged at the appropriate turnaround time rate in order to meet hold time requirements. Clients who use EMSL's prepaid courier services and/or common carrier may have a fee added to their project invoice to cover the costs if per shipment analysis fee ($) minimums are not met.

C. Sampling Responsibility

It is the customer's responsibility to ensure that samples are collected according to the appropriate regulations/method specifications. The user of a sampling device has the sole responsibility
to select the applicable sampler, media, and conditions to ensure that a valid sample has been collected. EMSL is not responsible for the improper selection of sampling devices even if EMSL supplies the devices to the user. Clients who order complementary media and supplies maybe charged for supplies not returned to the lab for analysis; including: cost of supplies, shipping and/or handling fee(s).

D. Sample Labeling & Packaging

It is the customer's responsibility to ensure that samples are labeled, packaged, and shipped according to the appropriate regulations/method specifications. Samples classified as Hazardous, Explosive, DEA regulated, FDA, Radiological/DOE, USDA Controlled or anything that requires special precautions when handling must be properly identified, pre-approved by the lab for submittal, and may incur additional surcharges for handling and disposal. EMSL reserves the right to refuse or return samples submitted for analysis which are unsuitable due to damage, leakage, incorrect or insufficient labeling, or that may be considered hazardous to our personnel or facility.

E. Turnaround Time

Turnaround Time (TAT) is defined as the time between sample acceptance by an authorized EMSL representative at the analyzing laboratory and analysis report completion. Turnaround time/due dates are based upon individual laboratory operational hours. TATs are offered in hours, business, or calendar days, depending upon the specific test. Submissions are accepted only during laboratory operational hours at the analyzing laboratory. Incomplete sample submissions or problematic sample conditions may result in processing and/ or TAT delays. Expedited TATs are subject to capacity restrictions and are not guaranteed to be available. Please call/pre-schedule with the laboratory to ensure capability and availability for expedited TATs. Unless otherwise approved, TAT Will Not Start and or will not be initiated for COD samples / projects until payment is received in full. If for any reason, the TAT originally requested will be missed, EMSL will automatically continue to proceed with completion of the work although at a longer TAT unless the client specifically indicates work is only contracted if the specific TAT requested and the job is to be cancelled if the TAT cannot be met.

F. Testing Policy

EMSL represents to its customers that all services provided hereunder shall be performed in accordance with industry recognized, professionally published, internally developed, and/or client stipulated testing procedures. Samples may be subcontracted, with prior customer notification and approval, to a third party laboratory that meets customer and EMSL qualification requirements. Specific test-level considerations may apply. See project quote and / or price book.

G. Pricing

EMSL pricing is periodically adjusted and EMSL reserves the right to update prices at its sole discretion at any time with notification. Unless specified in writing, quoted pricing expires if work is not submitted within 30 calendar days; otherwise quoted prices are valid for the remainder of the calendar year, but pricing may be adjusted based on the customer's non-compliance with payment terms, change in scope of work including frequency or volume, and/or non-compliance with the EMSL Terms and Conditions.

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Important Terms, Conditions, and Limitations

H. Payment Terms

If credit terms are approved, standard payment terms are 30 calendar days from date of laboratory invoice. Unless otherwise stated, rates are quoted in US Dollars. Interest charges will apply to all past due balances. If customer balance remains outstanding after 60 calendar days, EMSL reserves the right to refuse or suspend work, increase or update customer pricing immediately, and place the customer on Cash on Delivery (COD) status until such time as the account is made current. Additionally, customer agrees to pay any costs incurred to collect past due balances, including attorney's fees. For non-routine Special Projects, EMSL reserves the right to request a payment of up to 100% in advance of services performed. Unless otherwise approved, TAT and work will not be initiated for COD samples / projects until payment is received in full.

I. Customer Changes:

All changes in scope of work or TAT requested by the customer after sample acceptance must be confirmed by EMSL in writing; verbal change requests must be confirmed in writing. If requested change (s) results in a change in cost, the customer agrees to accept payment responsibility. In the event analysis is cancelled by the customer, EMSL will invoice for work completed to the point of cancellation notice. Additional cancellation fees may apply. EMSL is not responsible for TAT that is delayed due to customer changes. At its sole discretion, EMSL reserves the right to charge additional fees, change pricing, and / or reject samples due to: changes in scope of work, changes in quantity of samples, and changes in quality control requirements; charges for in-bound shipping, courier services, sample transfer, and sampling media; Hazardous, Explosive, DEA regulated or any other type of specialized sample as etermined by the laboratory.

J. Sample & Record Retention

See Division specific Terms and Conditions for standard sample retention times. Records are retained for 5 years, unless otherwise requested or required. Customer must notify EMSL, in
writing, at time of sample submission that samples and / or records are subject to specific regulatory retention requirements. EMSL must also be notified and approval must be obtained for any special disposal and/or any special sample storage and archive needs of the customer; additional fees may apply.

K. Disclaimer:

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted.

L. Severability

If any of these Terms and Conditions is found to be illegal, invalid, or unenforceable by a court of competent jurisdiction, any remaining Terms and Conditions will remain in full force and effect. These Terms and Conditions shall be interpreted in accordance with the laws of the State of New Jersey. Written, negotiated contracts or customer specific Terms and Conditions may supersede these Terms and Conditions.

M. Headings

The headings contained herein are for convenience only, and in the event of any conflict, the text of this paragraph, rather than the headings, will control.

N. Lab Reports, QC Data Packages & Reporting Limits

Reports will be emailed as a PDF to the client and also posted on LABConnect™. Clients that are not paperless (require mailed Reports, COC's, Invoices, and/or any combination of these documents) may be subject to surcharge fees and/or increased analytical rates. QC data packages for validation programs are available upon request and for an additional fee and Laboratory must be notified and approve the request prior to the sampling event and submission. Customer shall provide specific reporting limit requirements, if required, prior to sample submission. Analytical cost may vary based upon reporting limits and / or data quality objectives.

This report has been prepared by EMSL Analytical, Inc. at the request of and for the exclusive use of the client named in this report. Completely read the important terms, conditions, and limitations that apply to this report. The samples associated with this report were received in good condition unless otherwise noted. This report relates only to those items tested as received by the laboratory.

Appendix B

Reference Documents

Environmental Protection Agency (EPA) Method 200.8: Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma-Mass Spectrometry,

Environmental Protection Agency (EPA) Method 300.0: Determination of Inorganic Anions by Ion Chromatography.

Environmental Protection Agency (EPA) Method 150.1 Method for pH.

Environmental Protection Agency (EPA) Method 180.1: Determination of Turbidity by Nephelometry.

Environmental Protection Agency (EPA) 9223B Standard Method for the Examination of Water and Wastewater.

Environmental Protection Agency (EPA). Drinking Water Regulations. https://www.epa.gov/dwreginfo/drinking-water-regulations.