DETAIL ASSOCIATES, INC.

ENVIRONMENTAL ENGINEERING CONSULTANTS

INDOOR AIR QUALITY INVESTIGATION
MOLD ASSESSMENT

At

Lindbergh School
401 Glen Ave
Palisades Park, NJ

for

Palisades Park Board of Education
410 2nd St
Palisades Park, NJ 07650

December 2021

Project# NJ21-0422

Prepared by:
Stephen A. Jaraczewski, CMAI
BSChE, IH, MS Sustainability Management, Columbia University

560 Sylvan Avenue, Suite 365, Englewood Cliffs, New Jersey 07632
TEL: (201) 569-6708 FAX: (201) 569-4378 WORLDWIDE WEB: http://www.daienviro.com
E MAIL: stephenj@daienviro.com

EUROPE NORTH AMERICA ASIA

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY

At the request of Dr. Joseph Cirillo, an Indoor Air Quality (IAQ) Mold Assessment was conducted in the Lindbergh School at 401 Glen Ave, Palisades Park, New Jersey on November 24, 2021.The assessment focused on rooms #107, #108, #204, #209, #302, #307. Testing was conducted by Stephen Jaraczewski, a certified mold assessment investigator and industrial hygienist of Detail Associates Inc.

Testing parameters included airborne carbon dioxide, airborne volatile organic compounds (VOCs), temperature, relative humidity, and airborne microbiological agents. The testing results are as follows:

1. The airborne level of Carbon Dioxide (CO_2) was tested and was acceptable as per the ASHRAE guideline of 1,000 ppm.

2. The airborne levels of volatile organic compounds concentrations are well within acceptable indoor air quality criteria.

3. Temperature and Relative Humidity were measured during the day of the investigation. Recorded measurements were interpreted and compared to ASHRAE Standard 55 - 1981. Both were within the ASHRAE established comfortable range.

4. The airborne microbial (mold spores) samples yielded acceptable level of indoor airborne mold spores as compared with the background baseline airborne levels in all tested areas.

Findings:

Overall, indoor air quality was determined to be acceptable based on carbon dioxide, volatile organic compounds as well as temperature and humidity the tested basic indoor air quality indicators. Additionally, the sampled areas show acceptable levels of airborne mold spores. Overall, all tested locations have acceptable indoor air quality.

II. INTRODUCTION

I conducted an Indoor Air Quality (IAQ) mold assessment in rooms #107, #108, #204, #209, #302, #307 at 401 Glen Ave, Palisades Park, New Jersey on November 24, 2021. As part of the assessment, I conducted a visual inspection for any evidence of water penetration in the area, measured the temperature, humidity and airborne levels of carbon dioxide and carbon monoxide and collected air samples for determination of air microbial agents' presence.

The visual inspection showed the areas to be acceptable with exception of Room18 – Band Room complex. The walls moisture levels were elevated in number of locations. The carpeting was wet. Some of the contents appeared to be damaged with moisture.

Overall, the goal of the IAQ monitoring is to demonstrate the background quality of indoor air environment, and determine, at an early stage, whether there are potential health hazard concerns to the building occupants, and furthermore, to initiate remedial action(s), if necessary, to prevent the occurrence of building related illness.

III. EVALUATION CRITERIA

When speaking of contaminants and exposure to contaminants there are several institutions used for guidance.

The most well-known institution for setting exposure limit values is the Occupational Safety and Health Administration (OSHA). OSHA is a governmental agency who is responsible for assuring safety in the workplace for all employees. OSHA responds to employee complaints concerning workplace safety including air quality. OSHA also has the right to make inspections and levy fines on employers for violations concerning employee safety.

Another well-known body that sets exposure limits is known as the American Conference of Governmental Industrial Hygienists (ACGIH). This group is made up of industrial hygienists who publish their own set of exposure limits to contaminants. The ACGIH also makes recommendations to OSHA and the Environmental Protection Agency (EPA) on what it feels are acceptable exposure limits.

The third organization who publishes exposure limits is called the American Society of Heating Refrigeration and Air-Conditioning Engineers (ASHRAE). This group publishes exposure limits with a relationship to public health and will be referred to extensively throughout this report. This group as well as the ACGIH does not respond to employee complaints, nor do they can levy fines.

The National Institute of Occupational Safety and Health (NIOSH) is another organization. NIOSH conducted studies with and for OSHA and the EPA. NIOSH also conducted its own study and reported its findings and recommendations to the EPA and OSHA.

It is not uncommon for the different organizations to have different exposure limits for the same contaminant. In this situation it is advised to follow the more stringent of the exposure limits to assure safety and full compliance.

It is common practice in an Indoor Air Quality Investigation to compare sampling results to the more stringent guidelines. This measure is taken to assure public health especially in office environments where people seem to be more sensitive to contaminants and exposure to them.

IV. CONTAMINANT IDENTIFICATION

Based on over 600 studies conducted by the National Institute of Occupational Safety and Health (NIOSH), evidence was compiled on the causes attributable to air quality problems: Chemicals, odors, thermal, microbial, humidity and particulate. Based on this information a sampling strategy was created to identify any possible indoor air quality problems that may exist. The following is a summary of the contaminants chosen to be sampled for based on these attributable causes. The summary includes the contaminant name, description, method of contamination, and possible health effects.

Carbon Dioxide

Carbon dioxide (CO_2) is an odorless colorless gas which exists in the atmosphere. Indoor carbon dioxide concentrations are typically higher indoors than outdoors. Carbon dioxide is an exhaled by-product of mammalian metabolism. In office buildings and school structures occupied by multitudes, carbon dioxide concentrations will rise as the day progresses and peak in the late afternoon.

Carbon dioxide concentrations have therefore served as a useful index compound to assess the effective ventilation rate of a structure quickly and easily. Carbon dioxide levels in the outdoor environment is normally at 400 parts-per-million (ppm). In general, it is commonly accepted that afternoon carbon dioxide concentrations less than 1000 ppm should be associated in most cases with an acceptable supply of outside air. Excessive amounts of indoor carbon dioxide will result in headache, dizziness, and fatigue.

Temperature and Relative Humidity

The reason temperature must be studied during an IAQ is that recent research suggests that indoor air quality is judged to be worse as temperatures rise above 76 °F, regardless of actual air quality.

In general, the range of humidity levels recommended by different organizations seems to be 30% to 60% Relative Humidity (RH). RH below this level may produce discomfort from dryness. On the other hand, maintaining relative humidity at the lowest possible level helps to restrict growth of mold and fungus.

Microbiological Contaminants

Biological contamination is widespread. In many built environments, exposure is great, and the health effects are serious. It is now recognized that organisms or harmful substances derived from living organisms-fungi and bacteria are found in abundance in HVAC systems.

It can be readily predicted how humans will respond physically to these organisms, especially in "at risk populations" such as asthmatics, who make up about 5% of the population. It is likely that more than 10% of the exposed population will respond significantly to bio-contaminants. Among this 10%, the most vulnerable are the very young, the elderly, those known to be sensitive, and those in the low-income sector of society.

Microbial contamination occurs most often when moisture and food sources for living organisms are not properly managed. Ironically, mechanical ventilation systems often serve as homes for these contaminants. Biological pollutants such as fungi and bacteria breed in water that has been allowed to accumulate usually on hard surfaces, humidifiers, and cooling coil condensate pans. They also breed where water has collected on or under cellulose materials such as ceiling tiles, wallpaper, carpeting, insulation, and internally lined ductwork. Humans can be sensitized to several fungi such as aspergillus and penicillium. They can experience a range of health effects such as skin and eye irritation, labored breathing, and fatigue.

Exposure to these "natural" contaminants includes the following pathways:

*Cutaneous exposure through the skin due to minor wounds, pre-existing abrasions, or other skin breaks. Allergic processes manifest when dust and particles settle out and stick to the skin, where they may cause inflammatory or rash symptoms.

*Gastrointestinal - route of entry through ingestion is due to improper cleaning of the hands or exposure of food or water to a microbiological agent.

*Respiratory breathing in airborne microbiological agents, or their biological products contained on ambient fibers, is the main route of entry. Agents that reach deep lung, (alveoli) where the huge existing surface area provides exposure to allergenic material, can manifest symptoms of asthma or pulmonary.

Volatile Organic Compounds

Volatile organic compounds are compounds that have a high vapor pressure and low water solubility. Many VOCs are human-made chemicals that are used and produced in the manufacture of paints, pharmaceuticals, and refrigerants. VOCs typically are industrial solvents, such as trichloroethylene; fuel oxygenates, such as methyl tert-butyl ether (MTBE); or by-products produced by chlorination in water treatment, such as chloroform. VOCs are often components of petroleum fuels, hydraulic fluids, paint thinners and dry-cleaning agents. VOCs are common ground-water contaminants.

Volatile organic compounds (VOCs) are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short- and long-term

adverse health effects. Concentrations of many VOCs are consistently higher indoors (up to ten times higher) than outdoors. VOCs are emitted by a wide array of products numbering in the thousands. Examples include paints and lacquers, paint strippers, cleaning supplies, pesticides, building materials and furnishings, office equipment such as copiers and printers, correction fluids and carbonless copy paper, graphics and craft materials including glues and adhesives, permanent makers, and photographic solutions.

Organic chemicals are widely used as ingredients in household products. Paints, varnishes and wax all contain organic solvents, as do many cleaning, disinfecting, cosmetic, degreasing, and hobby products. Fuels are made up of organic chemicals. All these products can release organic compounds while you are using them, and, to some degree, when they are stored.

EPA's Total Exposure Assessment Methodology (TEAM)studies found levels of about a dozen common organic pollutants to be 2 to 5 times higher inside homes than outside, regardless of whether the homes were in rural or highly industrial areas. Additional TEAM studies indicate that while people are using products containing organic chemicals, they can expose themselves and others to very high pollutant levels, and elevated concentrations can persist in the air long after the activity is completed.

Low TVOC concentration levels are less than 0.12 ppm. The levels below show acceptable TVOC levels in the air we breathe:

TVOC Level ppm	**Level of Concern**
Less than 0.12 ppm	Low
0.12-0.3 ppm	Acceptable
0.3-0.4 ppm	Marginal
0.4-1.2 ppm	High

V. TESTING PROTOCOLS

Carbon dioxide, carbon monoxide, temperature and humidity were measured using a real-time Q-Trak IAQ Monitor Model 7575 manufactured by TSI Inc.

The microbiological air testing protocol included the use of an Air-O-Cell cassette with a high-volume pump. The surface sample was collected with the sterile surface tape. All the microbiological samples were analyzed by EMSL Analytical Environmental Laboratory for total fungal structure counts and species identification.

VI. INVESTIGATION RESULTS & DISCUSSION

As an IAQ practice, all sampling results are compared to the most stringent guidelines as to assure public health. Usually, the ASHRAE or the ACGIH have the more stringent guidelines followed by NIOSH, EPA, and OSHA.

It should be remembered that OSHA and the EPA are the organizations with powers of

enforcement while ASHRAE, NIOSH, and the ACGIH only give recommendations on the specific amount of exposure to be allowed.

A. Carbon Dioxide

The American Conference of Governmental Industrial Hygienist (ACGIH) and the National Institute for Occupational Safety and Health (NIOSH) recommend that the occupational health level for carbon dioxide not exceed 5,000 parts-per-million (PPM) of carbon dioxide in the air.

The Occupational Safety and Health Agency (OSHA) standard for occupational health level is 10,000 ppm of carbon dioxide in the air. The carbon dioxide level for the indoor air quality and occupational health level recommended by the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) has presently been established at 0.1% (1000 ppm) carbon dioxide for indoor living environments.

ASHRAE suggests the 1000 ppm be used as an indicator on how well the HVAC system is replacing used air with fresh outside air. It is not uncommon to witness levels of 500-600 ppm in the morning hours and 700-1000 in the late afternoon as the building occupants have been in the tenant space all day.

The following table summarizes the results for Carbon Dioxide:

CARBON DIOXIDE TABLE OF RESULTS

Location	Carbon Dioxide Range of Results (Parts Per Million)
Room #107	458 ppm - 508 ppm
Room #108	454 ppm - 482 ppm
Room #204	448 ppm - 473 ppm
Room #209	455 ppm - 466 ppm
Room #302	464 ppm - 502 ppm
Room #307	470 ppm - 504 ppm

The levels of Carbon Dioxide (CO_2) were acceptable as per the ASHRAE guideline of 1,000 ppm. It should be noted that those levels were obtained while the room was not occupied and not under normal activities.

B. Temperature & Humidity

ASHRAE has developed a chart depicting acceptable ranges of temperature and relative humidity during summer and winter months as depicted below:

RELATIVE HUMIDITY	WINTER TEMP - °F	SUMMER TEMP - °F
30%	68.5 - 76.0	74.0 - 80.0
40%	68.5 - 75.5	73.5 - 79.5
50%	68.5 - 74.5	73.5 - 79.0
60%	68.0 - 74.0	72.5 - 78.0

Temperature and Relative Humidity were measured during the time of the investigation. Recorded measurements were interpreted and compared to ASHRAE Standard 55 - 1981. The following table is the range of temperature and relative humidity measurements:

TEMPERATURE & RELATIVE HUMIDITY RANGE OF RESULTS

LOCATION	TEMPERATURE RANGE OF RESULTS	RELATIVE HUMIDITY RANGE OF RESULTS (PERCENT)
Room #107	66.4 - 71.1	20.2% - 24.6% rH
Room #108	71.1 - 73.0	16.5% - 18.4% rH
Room #204	70.1 - 70.8	18.6% - 19.3% rH
Room #209	68.7 - 69.9	15.3% - 15.6% rH
Room #302	70.9 – 72.0	16.0% - 17.5% rH
Room #307	72.3 – 74.7	16.1% - 17.7% rH

Temperature and Relative Humidity levels were within the ASHRAE established comfortable range.

C. Microbiological Air Sampling Results:

Laboratory analytical results of microbiological sampling have been evaluated with the presence of outdoor background sampling. Outside samples need to be taken for indoor -outdoor comparison. It can be expected for inside levels to be less than outside levels. If inside levels exceed outdoor levels, then this could be an indication of an excess moisture condition.

The following table is a summary of laboratory analytical results:

SUMMARY OF ANALYTICAL RESULTS for AIRBORNE MOLD/FUNGI

SAMPLE #	LOCATION	FUNGI CTS/m^{3*}
PAC-1124-1A	Room #107	100 CTS/m3
PAC-1124-2A	Room #108	107 CTS/m3
PAC-1124-3A	Background Outdoors	430 CTS/m3
PAC-1124-4A	Room #204	127 CTS/m3
PAC-1124-5A	Room #209	317 CTS/m3
PAC-1124-6A	Room #302	20 CTS/m3
PAC-1124-7A	Room #307	40 CTS/m3

*** CTS/m^3= spore count per cubic meter of air**

Airborne mold/fungi testing results showed elevated levels of airborne ascospores, cladosporium, ganoderma, pithomyces, paecilomyces-like and sporidesmium-like are above the outdoor background airborne levels. Refer to the Certificate of Analysis and the laboratory report.

D. Volatile Organic Compounds

Table of Results for Volatile Organic Compounds
November 24, 2021

Location	TVOCs Range of Results ppm
Room #107	0.02 ppm - 0.44 ppm
Room #108	0.00 ppm - 0.00 ppm
Room #204	0.00 ppm - 0.00 ppm
Room #209	0.00 ppm - 0.00 ppm
Room #302	0.00 ppm - 0.00 ppm
Room #307	0.00 ppm - 0.00 ppm

VII. FINDINGS & RECOMMENDATIONS

At the request of Dr. Joseph Cirillo, an Indoor Air Quality (IAQ) Assessment was performed in rooms throughout the Lindbergh School at 401 Glen Ave, Palisades Park, New Jersey on November 24, 2021.The assessment focused on rooms #107, #108, #204, #209, #302, #307. Testing was conducted by Stephen Jaraczewski, a certified mold assessment investigator and industrial hygienist of Detail Associates Inc.

Testing parameters included airborne carbon dioxide, airborne carbon monoxide, temperature, relative humidity, and airborne microbiological agents. The testing results are as follows:

1. The airborne level of Carbon Dioxide (CO_2) was tested and was acceptable as per the ASHRAE guideline of 1,000 ppm.

2. The airborne levels of volatile organic compounds in all collected samples were found to be within an acceptable indoor air quality.

3. Temperature and Relative Humidity were measured during the day of the investigation. Recorded measurements were interpreted and compared to ASHRAE Standard 55 - 1981. Both were within the ASHRAE established comfortable range.

4. The airborne microbial (mold spores) samples yielded acceptable levels of indoor airborne mold spores as compared with the background baseline airborne levels in all tested areas.

Findings:

Overall, indoor air quality was determined to be acceptable based on carbon dioxide, volatile organic compounds as well as temperature and humidity the tested basic indoor air quality indicators. Furthermore, the sampled areas show acceptable levels of airborne mold spores were acceptable mold spore levels. Overall, all tested locations have acceptable indoor air quality.

VII. FINDINGS & RECOMMENDATIONS

At the request of Dr. Joseph Cirillo, an Indoor Air Quality (IAQ) Assessment was performed in rooms throughout the Lindbergh School at 401 Glen Ave, Palisades Park, New Jersey on November 24, 2021.The assessment focused on rooms #107, #108, #204, #209, #302, #307. Testing was conducted by Stephen Jaraczewski, a certified mold assessment investigator and industrial hygienist of Detail Associates Inc.

Testing parameters included airborne carbon dioxide, airborne carbon monoxide, temperature, relative humidity, and airborne microbiological agents. The testing results are as follows:

1. The airborne level of Carbon Dioxide (CO_2) was tested and was acceptable as per the ASHRAE guideline of 1,000 ppm.

2. The airborne levels of volatile organic compounds in all collected samples were found to be within an acceptable indoor air quality.

3. Temperature and Relative Humidity were measured during the day of the investigation. Recorded measurements were interpreted and compared to ASHRAE Standard 55 - 1981. Both were within the ASHRAE established comfortable range.

4. The airborne microbial (mold spores) samples yielded acceptable levels of indoor airborne mold spores as compared with the background baseline airborne levels in all tested areas.

Findings:

Overall, indoor air quality was determined to be acceptable based on carbon dioxide, volatile organic compounds as well as temperature and humidity the tested basic indoor air quality indicators. Furthermore, the sampled areas show acceptable levels of airborne mold spores were acceptable mold spore levels. Overall, all tested locations have acceptable indoor air quality.

APPENDIX I
CERTIFICATES OF ANALYSIS
LABORATORY ANALYTICAL RESULTS

Other Airborne ID:	None Detected
Sample #: PAC-1124-6A	**Room 302**
Total Count Airborne Spores:	**20 CTS/m³**
Airborne Spore ID:	(20 CTS/m³) Basidiospores
Other Airborne ID:	None Detected
Sample #: PAC-1124-7A	**Room 307**
Total Count Airborne Spores:	**40 CTS/m³**
Airborne Spore ID:	(40 CTS/m³) Basidiospores
Other Airborne ID:	None Detected

Category: Count/Per Area Analyzed:

Low/Normal:	<250 Cfu/m3
Moderate/Borderline:	250 – 1,000 Cfu/m3
Active Growth:	> 1,000 Cfu/m3
Very Active Growth:	> 5,000 Cfu/m3

Analysis by
EMSL Analytical, Inc.
Methods MICRO-SOP-201, ASTM D7391

EXPANDED FUNGAL REPORT ™

Prepared Exclusively For

Detail Associates, Inc.

560 Sylvan Avenue
Suite 3065
Englewood Cliffs, NJ 07632
Phone:201-569-6708

Report Date:	**11/30/2021**
Project:	**NJ21-0423**
EMSL Order:	**032121723**

AIHA LAP, LLC.

EMLAP #102581

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.

© 2006 EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Web: http://www.EMSL.com Email:manhattanlab@emsl.com

Attn: Stephen Jaraczewski
Detail Associates, Inc.
560 Sylvan Avenue
Suite 3065
Englewood Cliffs, NJ 07632

Proj: NJ21-0423

EMSL Order:	032121723
Customer ID:	DETA50
Collected:	11/24/2021
Received:	11/29/2021
Analyzed:	11/30/2021

1. Description of Analysis

Analytical Laboratory

EMSL Analytical, Inc. (EMSL) is a nationwide, full service, analytical testing laboratory network providing Asbestos, Mold, Indoor Air Quality, Microbiological, Environmental, Chemical, Forensic, Materials, Industrial Hygiene and Mechanical Testing services since 1981. Ranked as the premier independently owned environmental testing laboratory in the nation, EMSL puts analytical quality as its top priority. This quality is recognized by many well-respected federal, state and private accrediting agencies, and assured by our high quality personnel, including many Ph.D. microbiologists and mycologists.

EMSL is an independent laboratory that performed the analysis of these samples. EMSL did not conduct the sampling or site investigation for this report. The samples referenced herein were analyzed under strict quality control procedures using state-of-the-art microbiological methods. The analytical methods used and the data presented are scientifically and legally defensible.

The laboratory data is provided in compliance with ISO-IEC 17025 guidelines for the particular test(s) requested, including any associated limitations for the methods employed. These data are intended for use by professionals having knowledge of the testing methods necessary to interpret them accurately.

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.
© 2006,EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Web: http://www.EMSL.com Email:manhattanlab@emsl.com

Attn:	Stephen Jaraczewski	EMSL Order:	032121723
	Detail Associates, Inc.	Customer ID:	DETA50
	560 Sylvan Avenue	Collected:	11/24/2021
	Suite 3065	Received:	11/29/2021
	Englewood Cliffs, NJ 07632	Analyzed:	11/30/2021
Proj:	NJ21-0423		

Air Samples - Spore traps:

Spore traps are commercially available sampling devices that capture airborne particles on an adhesive slide. Air is pulled through the device using a vacuum pump. Spores, as well as other airborne particles, are impacted on the collection adhesive. Using spore trap collection methods has inherent limitations. These collection methods are biased towards larger spore sizes.

The analysis for total spore counts is a direct microscopic examination and does not include culturing or growing the fungi. Therefore, the results include both viable and non-viable spores. Some fungal groups produce similar spore types that cannot be distinguished by direct microscopic examination alone (i.e., *Aspergillus/Penicillium*, and others). Other spore types may lack distinguishing features that aid in their identification. These types are grouped into larger categories such as Ascospores or Basidiospores.

Fungal spores are identified and grouped by morphological characteristics including color, shape, septation, ornamentation, and fruiting structures (if present) which are compared to published mycological identification keys and texts. EMSL reports provide spore counts per cubic meter of air to three significant figures. Please note that each spore category is reported to three significant figures. Due to rounding and the application of three significant figures the sum of the individual spore numbers may not equal the total spore count on the report. EMSL does not maintain responsibility for final volume concentrations (counts/m3) since this volume is provided by the field collector and can not be verified by EMSL.

EMSL analyzes spore traps using phase contrast microscopy. There is a wide choice of collection devices (Air-O-Cell, Micro-5, Burkhard, etc.) on the market. Differences in analytical method may exist between spore trap devices.

Spore trap results are reported in spores per cubic meter of air. Due to the other airborne particles collected with the spores, EMSL reports a background particle density. Background density is an indication of overall particulate matter present on the sample (i.e. dust in the air). High background concentrations may obscure spores such as the *Penicillium/Aspergillus* group. The rating system is from 1-5 with 1 = 1 - 25% of the background obscured by material, 2 = 26 - 50%, 3 = 51 - 75%, 4 = 76% - 99%, 5 = 100% or overloaded. A background rating of 4 or higher should be regarded as a minimum count since the actual concentrations may be higher than those reported. EMSL will not be held responsible for overloading of samples. Sample volumes are left to the discretion of the company or persons conducting the fieldwork.

Skin fragment density is the percentage of skin cells making up the total background material, 1 = 1 - 25%, 2 = 26 - 50%, 3 = 51 - 75%, 4 = 76-100%. Skin fragment density is considered an indication of the general cleanliness in the area sampled. It has been estimated that up to 90% of household dust consists of dead skin cells.

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.
© 2006,EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Web: http://www.EMSL.com Email:manhattanlab@emsl.com

Attn: Stephen Jaraczewski
Detail Associates, Inc.
560 Sylvan Avenue
Suite 3065
Englewood Cliffs, NJ 07632

Proj: NJ21-0423

EMSL Order:	032121723
Customer ID:	DETA50
Collected:	11/24/2021
Received:	11/29/2021
Analyzed:	11/30/2021

2. Analytical Results

See attached data reports and charts.

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.

© 2006 EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Web: http://www.EMSL.com Email:manhattanlab@emsl.com

Attn: Stephen Jaraczewski
Detail Associates, Inc.
560 Sylvan Avenue
Suite 3065
Englewood Cliffs, NJ 07632

Proj: NJ21-0423

EMSL Order:	032121723
Customer ID:	DETA50
Collected:	11/24/2021
Received:	11/29/2021
Analyzed:	11/30/2021

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
032121723-0001	Alternaria (Ulocladium)	-	-	-	
	Ascospores	-	-	-	
Client Sample ID	Aspergillus/Penicillium	-	-	-	
PAC-1124-1A	Basidiospores	5	100	100	Acceptable
	Bipolaris++	-	-	-	
	Chaetomium++	-	-	-	
Location	Cladosporium	-	-	-	
ROOM 107	Curvularia	-	-	-	
	Epicoccum	-	-	-	
Sample Volume (L)	Fusarium++	-	-	-	
	Ganoderma	-	-	-	
150	Myxomycetes++	-	-	-	
	Pithomyces++	-	-	-	
Sample Type	Rust	-	-	-	
	Scopulariopsis/Microascus	-	-	-	
Inside	Stachybotrys/Memnoniella	-	-	-	
Comments	Unidentifiable Spores	-	-	-	
	Zygomycetes	-	-	-	
	Total Fungi	**5**	**100**	**100**	Acceptable
	Hyphal Fragment	-	-	-	
	Insect Fragment	-	-	-	
	Pollen	-	-	-	

Analytical Sensitivity 600x: **22** counts/cubic meter
Analytical Sensitivity 300x *: **7*** counts/cubic meter

Skin Fragments:	**2**	1 to 4 (low to high)
Fibrous Particulate:	**1**	1 to 4 (low to high)
Background:	**1**	1 to 4 (low to high); 5 (overloaded)

Acceptable Concentration at or below background
Slightly Elevated Concentration above background
ELEVATED Concentration 10X or more above background

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
Potential for mycotoxin production exists with these fungi.
These fungi are considered water damage indicators.

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

Initial report from: 11/30/2021 16:04:03

Aaron Patak, Microbiology Laboratory Director
or Other Approved Signatory

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. High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed.
Samples analyzed by EMSL Analytical, Inc. New York, NY AIHA-LAP, LLC-EMLAP Accredited #102581

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.

© 2006 EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

EMSL Analytical, Inc.

307 West 38th Street New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Web: http://www.EMSL.com Email:manhattanlab@emsl.com

Attn: Stephen Jaraczewski
Detail Associates, Inc.
560 Sylvan Avenue
Suite 3065
Englewood Cliffs, NJ 07632

Proj: NJ21-0423

EMSL Order: 032121723
Customer ID: DETA50
Collected: 11/24/2021
Received: 11/29/2021
Analyzed: 11/30/2021

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
032121723-0002	Alternaria (Ulocladium)	-	-	-	
	Ascospores	-	-	-	
Client Sample ID	Aspergillus/Penicillium	-	-	-	
PAC-1124-2A	Basidiospores	5	100	93.5	Acceptable
	Bipolaris++	-	-	-	
	Chaetomium++	-	-	-	
Location	Cladosporium	-	-	-	
ROOM 108	Curvularia	-	-	-	
	Epicoccum	-	-	-	
Sample Volume (L)	Fusarium++	-	-	-	
	Ganoderma	-	-	-	
150	Myxomycetes++	1*	7*	6.5	Acceptable
	Pithomyces++	-	-	-	
Sample Type	Rust	-	-	-	
	Scopulariopsis/Microascus	-	-	-	
Inside	Stachybotrys/Memnoniella	-	-	-	
	Unidentifiable Spores	-	-	-	
Comments	Zygomycetes	-	-	-	
	Total Fungi	**6**	**107**	**100**	Acceptable
	Hyphal Fragment	-	-	-	
	Insect Fragment	-	-	-	
	Pollen	1*	7*	-	Slightly Elevated

Analytical Sensitivity 600x: **22** counts/cubic meter
Analytical Sensitivity 300x *: **7*** counts/cubic meter

Skin Fragments:	1	1 to 4 (low to high)
Fibrous Particulate:	1	1 to 4 (low to high)
Background:	1	1 to 4 (low to high); 5 (overloaded)

Acceptable Concentration at or below background
Slightly Elevated Concentration above background
ELEVATED Concentration 10X or more above background

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
Potential for mycotoxin production exists with these fungi.
These fungi are considered water damage indicators.

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

Initial report from: 11/30/2021 16:04:03

Aaron Patak, Microbiology Laboratory Director
or Other Approved Signatory

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. High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed.
Samples analyzed by EMSL Analytical, Inc. New York, NY AIHA-LAP, LLC-EMLAP Accredited #102581

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.

© 2006,EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

EMSL Analytical, Inc.

307 West 38th Street New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Web: http://www.EMSL.com Email:manhattanlab@emsl.com

Attn: Stephen Jaraczewski
Detail Associates, Inc.
560 Sylvan Avenue
Suite 3065
Englewood Cliffs, NJ 07632

Proj: NJ21-0423

EMSL Order:	032121723
Customer ID:	DETA50
Collected:	11/24/2021
Received:	11/29/2021
Analyzed:	11/30/2021

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

032121723-0003

Client Sample ID
PAC-1124-3A

Location
BACKGROUND OUTDOORS

Sample Volume (L)
150

Sample Type
Background

Comments

Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
Alternaria (Ulocladium)	-	-	-	
Ascospores	-	-	-	
Aspergillus/Penicillium	-	-	-	
Basidiospores	15	330	76.7	
Bipolaris++	-	-	-	
Chaetomium++	-	-	-	
Cladosporium	2*	10*	2.3	
Curvularia	-	-	-	
Epicoccum	-	-	-	
Fusarium++	-	-	-	
Ganoderma	-	-	-	
Myxomycetes++	4	90	20.9	
Pithomyces++	-	-	-	
Rust	-	-	-	
Scopulariopsis/Microascus	-	-	-	
Stachybotrys/Memnoniella	-	-	-	
Unidentifiable Spores	-	-	-	
Zygomycetes	-	-	-	
Total Fungi	**21**	**430**	**100**	
Hyphal Fragment	-	-	-	
Insect Fragment	-	-	-	
Pollen	-	-	-	

Analytical Sensitivity 600x: **22** counts/cubic meter
Analytical Sensitivity 300x *: **7*** counts/cubic meter

Skin Fragments:	1	1 to 4 (low to high)
Fibrous Particulate:	1	1 to 4 (low to high)
Background:	4	1 to 4 (low to high); 5 (overloaded)

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
Potential for mycotoxin production exists with these fungi.
These fungi are considered water damage indicators.

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

Initial report from: 11/30/2021 16:04:03

Aaron Patak, Microbiology Laboratory Director
or Other Approved Signatory

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. High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed.
Samples analyzed by EMSL Analytical, Inc. New York, NY AIHA-LAP, LLC-EMLAP Accredited #102581

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.

© 2006 EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

EMSL Analytical, Inc.

307 West 38th Street New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Web: http://www.EMSL.com Email:manhattanlab@emsl.com

Attn: Stephen Jaraczewski
Detail Associates, Inc.
560 Sylvan Avenue
Suite 3065
Englewood Cliffs, NJ 07632

Proj: NJ21-0423

EMSL Order:	032121723
Customer ID:	DETA50
Collected:	11/24/2021
Received:	11/29/2021
Analyzed:	11/30/2021

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
032121723-0004	Alternaria (Ulocladium)	-	-	-	
	Ascospores	-	-	-	
Client Sample ID	Aspergillus/Penicillium	-	-	-	
PAC-1124-4A	Basidiospores	5	100	78.7	Acceptable
	Bipolaris++	-	-	-	
	Chaetomium++	-	-	-	
Location	Cladosporium	1	20	15.7	Slightly Elevated
ROOM 204	Curvularia	-	-	-	
	Epicoccum	-	-	-	
Sample Volume (L)	Fusarium++	-	-	-	
	Ganoderma	-	-	-	
150	Myxomycetes++	-	-	-	
	Pithomyces++	1*	7*	5.5	Slightly Elevated
Sample Type	Rust	-	-	-	
	Scopulariopsis/Microascus	-	-	-	
Inside	Stachybotrys/Memnoniella	-	-	-	
	Unidentifiable Spores	-	-	-	
Comments	Zygomycetes	-	-	-	
	Total Fungi	**7**	**127**	**100**	Acceptable
	Hyphal Fragment	-	-	-	
	Insect Fragment	-	-	-	
	Pollen	1*	7*	-	Slightly Elevated

Analytical Sensitivity 600x: **22** counts/cubic meter
Analytical Sensitivity 300x *: **7*** counts/cubic meter

Skin Fragments:	2	1 to 4 (low to high)
Fibrous Particulate:	1	1 to 4 (low to high)
Background:	1	1 to 4 (low to high); 5 (overloaded)

Acceptable Concentration at or below background
Slightly Elevated Concentration above background
ELEVATED Concentration 10X or more above background

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
Potential for mycotoxin production exists with these fungi.
These fungi are considered water damage indicators.

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

Initial report from: 11/30/2021 16:04:03

Aaron Patak, Microbiology Laboratory Director
or Other Approved Signatory

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. High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed.
Samples analyzed by EMSL Analytical, Inc. New York, NY AIHA-LAP, LLC-EMLAP Accredited #102581

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.

© 2006,EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

EMSL Analytical, Inc.

307 West 38th Street New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Web: http://www.EMSL.com Email:manhattanlab@emsl.com

Attn: Stephen Jaraczewski
Detail Associates, Inc.
560 Sylvan Avenue
Suite 3065
Englewood Cliffs, NJ 07632

Proj: NJ21-0423

EMSL Order:	032121723
Customer ID:	DETA50
Collected:	11/24/2021
Received:	11/29/2021
Analyzed:	11/30/2021

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
032121723-0005	Alternaria (Ulocladium)	-	-	-	
	Ascospores	1	20	6.3	Slightly Elevated
Client Sample ID	Aspergillus/Penicillium	-	-	-	
PAC-1124-5A	Basidiospores	7	200	63.1	Acceptable
	Bipolaris++	-	-	-	
	Chaetomium++	-	-	-	
Location	Cladosporium	-	-	-	
ROOM 209	Curvularia	-	-	-	
	Epicoccum	-	-	-	
Sample Volume (L)	Fusarium++	-	-	-	
	Ganoderma	-	-	-	
150	Myxomycetes++	3	70	22.1	Acceptable
	Pithomyces++	1*	7*	2.2	Slightly Elevated
Sample Type	Rust	1	20	6.3	Slightly Elevated
	Scopulariopsis/Microascus	-	-	-	
Inside	Stachybotrys/Memnoniella	-	-	-	
Comments	Unidentifiable Spores	-	-	-	
	Zygomycetes	-	-	-	
	Total Fungi	**13**	**317**	**100**	Acceptable
	Hyphal Fragment	-	-	-	
	Insect Fragment	-	-	-	
	Pollen	-	-	-	

Analytical Sensitivity 600x: **22** counts/cubic meter
Analytical Sensitivity 300x *: **7*** counts/cubic meter

Skin Fragments: **2** 1 to 4 (low to high)
Fibrous Particulate: **1** 1 to 4 (low to high)
Background: **4** 1 to 4 (low to high); 5 (overloaded)

Acceptable Concentration at or below background
Slightly Elevated Concentration above background
ELEVATED Concentration 10X or more above background

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
Potential for mycotoxin production exists with these fungi.
These fungi are considered water damage indicators.

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

Initial report from: 11/30/2021 16:04:03

Aaron Patak, Microbiology Laboratory Director
or Other Approved Signatory

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. High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed.
Samples analyzed by EMSL Analytical, Inc. New York, NY AIHA-LAP, LLC-EMLAP Accredited #102581

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.

© 2006 EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Web: http://www.EMSL.com Email:manhattanlab@emsl.com

Attn: Stephen Jaraczewski
Detail Associates, Inc.
560 Sylvan Avenue
Suite 3065
Englewood Cliffs, NJ 07632

Proj: NJ21-0423

EMSL Order:	032121723
Customer ID:	DETA50
Collected:	11/24/2021
Received:	11/29/2021
Analyzed:	11/30/2021

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
032121723-0006	Alternaria (Ulocladium)	-	-	-	
	Ascospores	-	-	-	
Client Sample ID	Aspergillus/Penicillium	-	-	-	
PAC-1124-6A	Basidiospores	1	20	100	Acceptable
	Bipolaris++	-	-	-	
	Chaetomium++	-	-	-	
Location	Cladosporium	-	-	-	
ROOM 302	Curvularia	-	-	-	
	Epicoccum	-	-	-	
Sample Volume (L)	Fusarium++	-	-	-	
	Ganoderma	-	-	-	
150	Myxomycetes++	-	-	-	
	Pithomyces++	-	-	-	
Sample Type	Rust	-	-	-	
	Scopulariopsis/Microascus	-	-	-	
Inside	Stachybotrys/Memnoniella	-	-	-	
Comments	Unidentifiable Spores	-	-	-	
	Zygomycetes	-	-	-	
	Total Fungi	**1**	**20**	**100**	Acceptable
	Hyphal Fragment	-	-	-	
	Insect Fragment	-	-	-	
	Pollen	-	-	-	

Analytical Sensitivity 600x: **22** counts/cubic meter
Analytical Sensitivity 300x *: **7*** counts/cubic meter

Skin Fragments:	1	1 to 4 (low to high)
Fibrous Particulate:	1	1 to 4 (low to high)
Background:	1	1 to 4 (low to high); 5 (overloaded)

Acceptable Concentration at or below background
Slightly Elevated Concentration above background
ELEVATED Concentration 10X or more above background

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
Potential for mycotoxin production exists with these fungi.
These fungi are considered water damage indicators.

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

Initial report from: 11/30/2021 16:04:03

Aaron Patak, Microbiology Laboratory Director
or Other Approved Signatory

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. High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed.
Samples analyzed by EMSL Analytical, Inc. New York, NY AIHA-LAP, LLC-EMLAP Accredited #102581

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.
© 2006,EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

EMSL Analytical, Inc.

307 West 38th Street New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Web: http://www.EMSL.com Email:manhattanlab@emsl.com

Attn: Stephen Jaraczewski
Detail Associates, Inc.
560 Sylvan Avenue
Suite 3065
Englewood Cliffs, NJ 07632

Proj: NJ21-0423

EMSL Order:	032121723
Customer ID:	DETA50
Collected:	11/24/2021
Received:	11/29/2021
Analyzed:	11/30/2021

Spore Trap ASSESSMENTReport™ Air-O-Cell(™) Analysis of Fungal Spores & Particulates (Methods MICRO-SOP-201, ASTM D7391)

	Particle Identification	Raw Count	(Count/m³)	% of Total	Interpretation Guideline
032121723-0007	Alternaria (Ulocladium)	-	-	-	
	Ascospores	-	-	-	
Client Sample ID	Aspergillus/Penicillium	-	-	-	
PAC-1124-7A	Basidiospores	2	40	100	Acceptable
	Bipolaris++	-	-	-	
	Chaetomium++	-	-	-	
Location	Cladosporium	-	-	-	
ROOM 307	Curvularia	-	-	-	
	Epicoccum	-	-	-	
Sample Volume (L)	Fusarium++	-	-	-	
	Ganoderma	-	-	-	
150	Myxomycetes++	-	-	-	
	Pithomyces++	-	-	-	
Sample Type	Rust	-	-	-	
	Scopulariopsis/Microascus	-	-	-	
Inside	Stachybotrys/Memnoniella	-	-	-	
Comments	Unidentifiable Spores	-	-	-	
	Zygomycetes	-	-	-	
	Total Fungi	**2**	**40**	**100**	Acceptable
	Hyphal Fragment	-	-	-	
	Insect Fragment	-	-	-	
	Pollen	-	-	-	

Analytical Sensitivity 600x: **22** counts/cubic meter
Analytical Sensitivity 300x *: **7*** counts/cubic meter

Skin Fragments:	1	1 to 4 (low to high)
Fibrous Particulate:	1	1 to 4 (low to high)
Background:	2	1 to 4 (low to high); 5 (overloaded)

Acceptable Concentration at or below background
Slightly Elevated Concentration above background
ELEVATED Concentration 10X or more above background

Not commonly found growing indoors, spores likely come from outside.
Spores reported to be able to cause allergies in individuals.
Potential for mycotoxin production exists with these fungi.
These fungi are considered water damage indicators.

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

Initial report from: 11/30/2021 16:04:03

Aaron Patak, Microbiology Laboratory Director
or Other Approved Signatory

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. High levels of background particulate can obscure spores and other particulates, leading to underestimation. Background levels of 5 indicate an overloading of background particulates, prohibiting accurate detection and quantification. Present = Spores detected on overloaded samples. Results are not blank corrected unless otherwise noted. The detection limit is equal to one fungal spore, structure, pollen, fiber particle or insect fragment. "*" Denotes particles found at 300X. "-" Denotes not detected. Due to method stopping rules, raw counts in excess of 100 are extrapolated based on the percentage analyzed.
Samples analyzed by EMSL Analytical, Inc. New York, NY AIHA-LAP, LLC-EMLAP Accredited #102581

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.

© 2006 EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

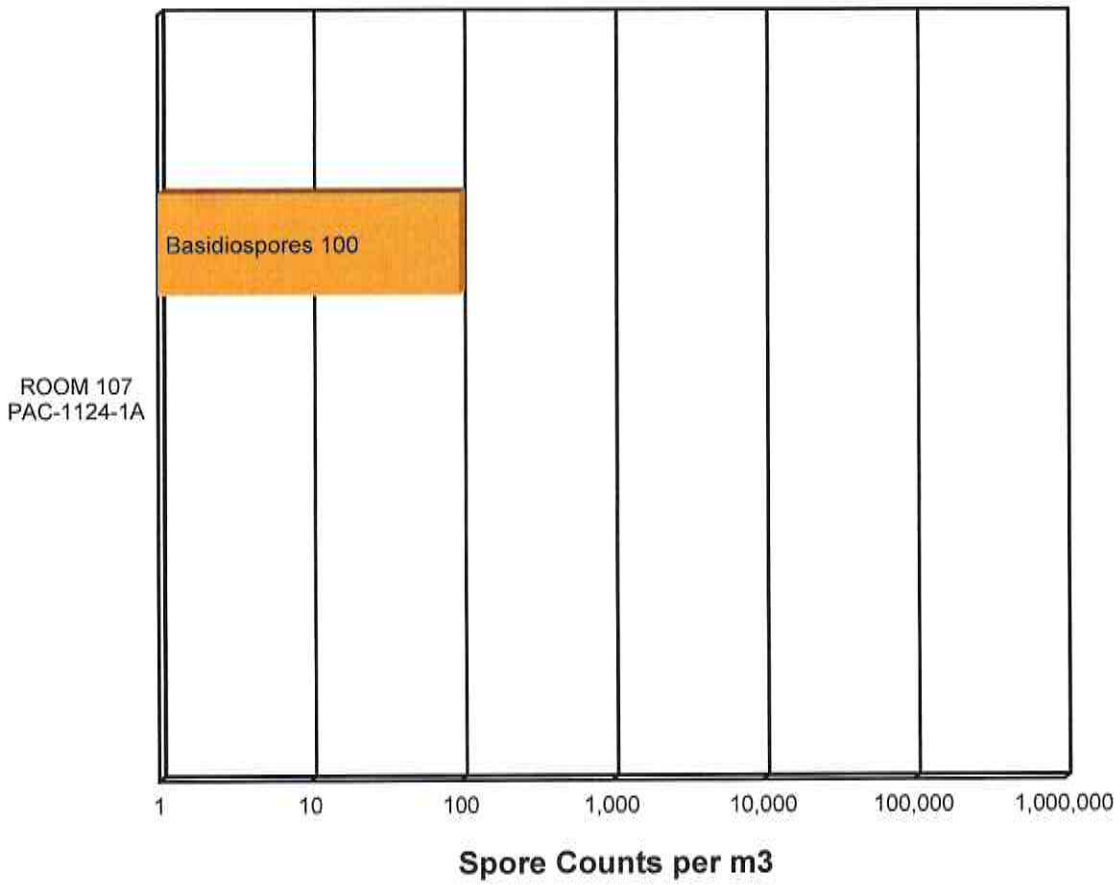
EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Web: http://www.EMSL.com Email:manhattanlab@emsl.com

Attn: Stephen Jaraczewski
Detail Associates, Inc.
560 Sylvan Avenue
Suite 3065
Englewood Cliffs, NJ 07632

Proj: NJ21-0423

EMSL Order:	032121723
Customer ID:	DETA50
Collected:	11/24/2021
Received:	11/29/2021
Analyzed:	11/30/2021

Spore Trap Report: Total Counts



* The chart is displayed using a logarithmic scale. Bar size is not directly proportional to the number of spores.

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.
© 2006,EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

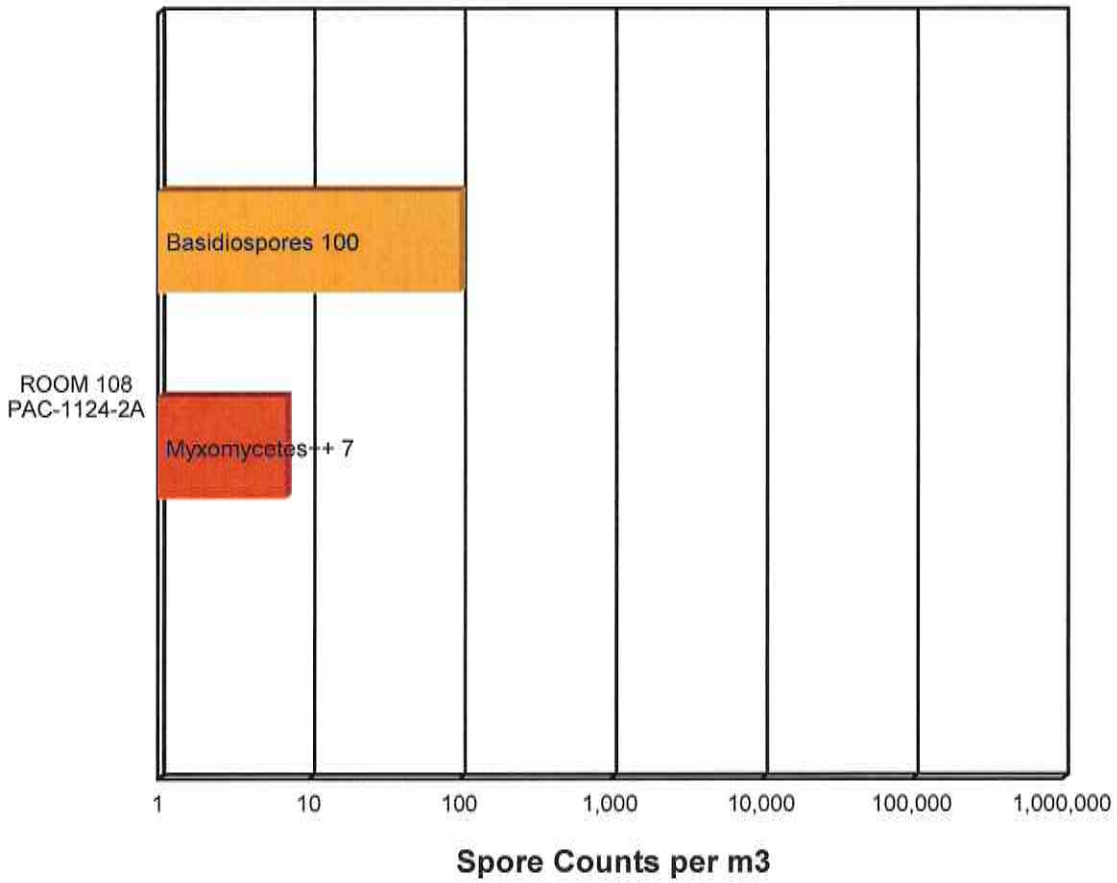
EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Web: http://www.EMSL.com Email:manhattanlab@emsl.com

Attn: Stephen Jaraczewski
Detail Associates, Inc.
560 Sylvan Avenue
Suite 3065
Englewood Cliffs, NJ 07632

Proj: NJ21-0423

EMSL Order:	032121723
Customer ID:	DETA50
Collected:	11/24/2021
Received:	11/29/2021
Analyzed:	11/30/2021

Spore Trap Report: Total Counts



* The chart is displayed using a logarithmic scale. Bar size is not directly proportional to the number of spores.

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.
© 2006,EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

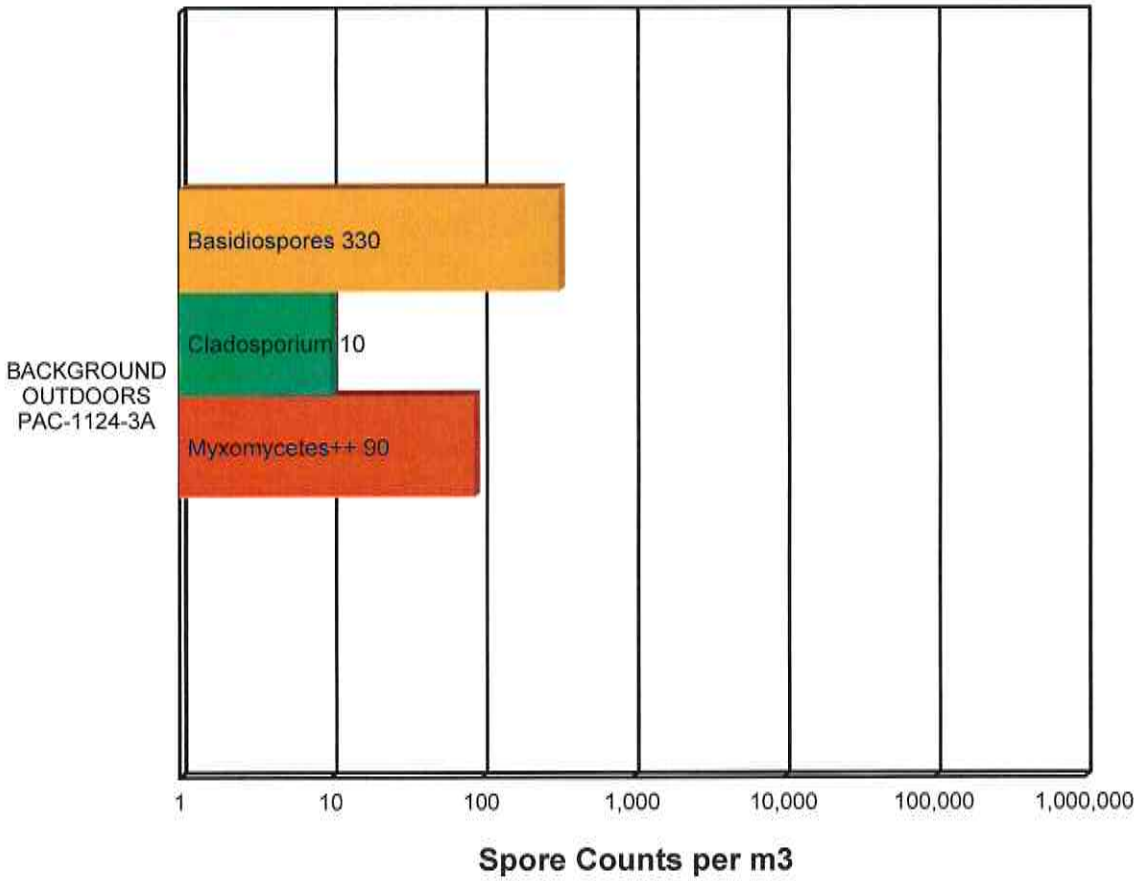
EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Web: http://www.EMSL.com Email:manhattanlab@emsl.com

Attn: Stephen Jaraczewski
Detail Associates, Inc.
560 Sylvan Avenue
Suite 3065
Englewood Cliffs, NJ 07632

Proj: NJ21-0423

EMSL Order: 032121723
Customer ID: DETA50
Collected: 11/24/2021
Received: 11/29/2021
Analyzed: 11/30/2021

Spore Trap Report: Total Counts



Ascospores Basidiospores Cladosporium Myxomycetes++ Pithomyces++
Rust

* The chart is displayed using a logarithmic scale. Bar size is not directly proportional to the number of spores.

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.
© 2006,EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

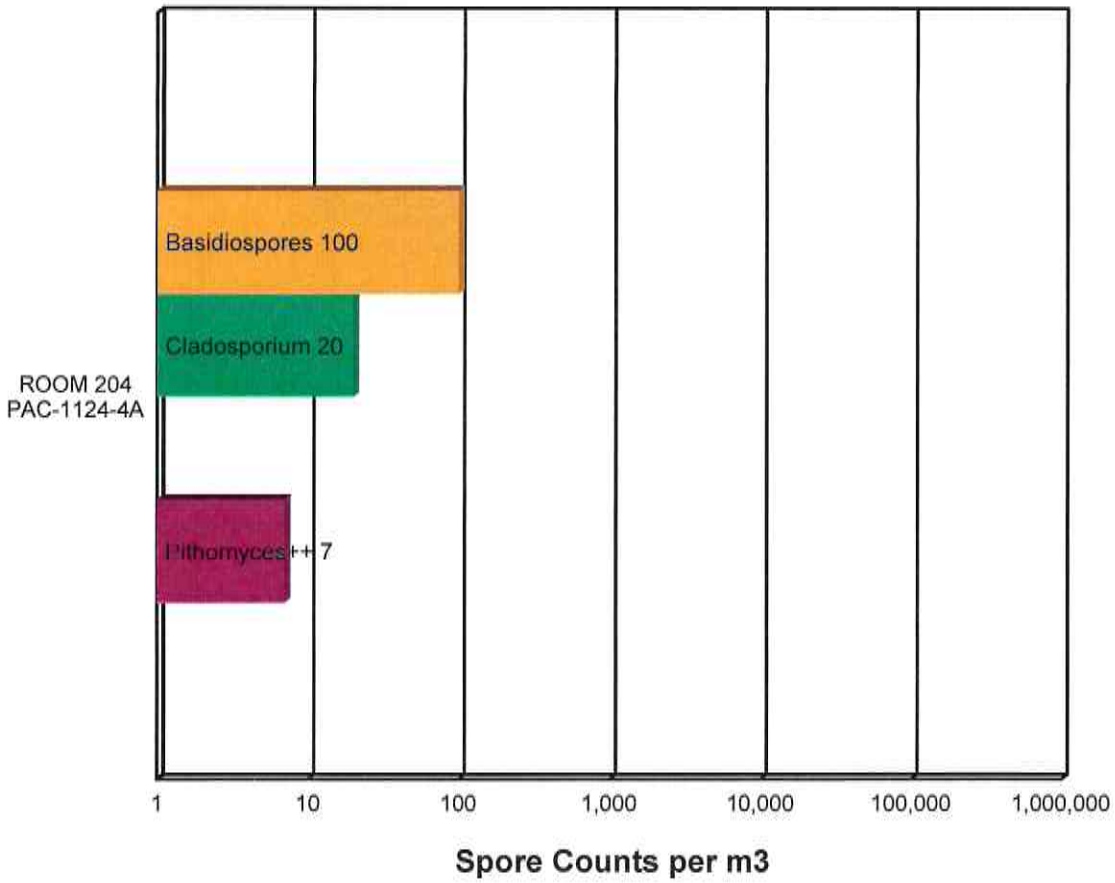
EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Web: http://www.EMSL.com Email:manhattanlab@emsl.com

Attn: Stephen Jaraczewski
Detail Associates, Inc.
560 Sylvan Avenue
Suite 3065
Englewood Cliffs, NJ 07632

Proj: NJ21-0423

EMSL Order:	032121723
Customer ID:	DETA50
Collected:	11/24/2021
Received:	11/29/2021
Analyzed:	11/30/2021

Spore Trap Report: Total Counts



* The chart is displayed using a logarithmic scale. Bar size is not directly proportional to the number of spores.

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.

© 2006.EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

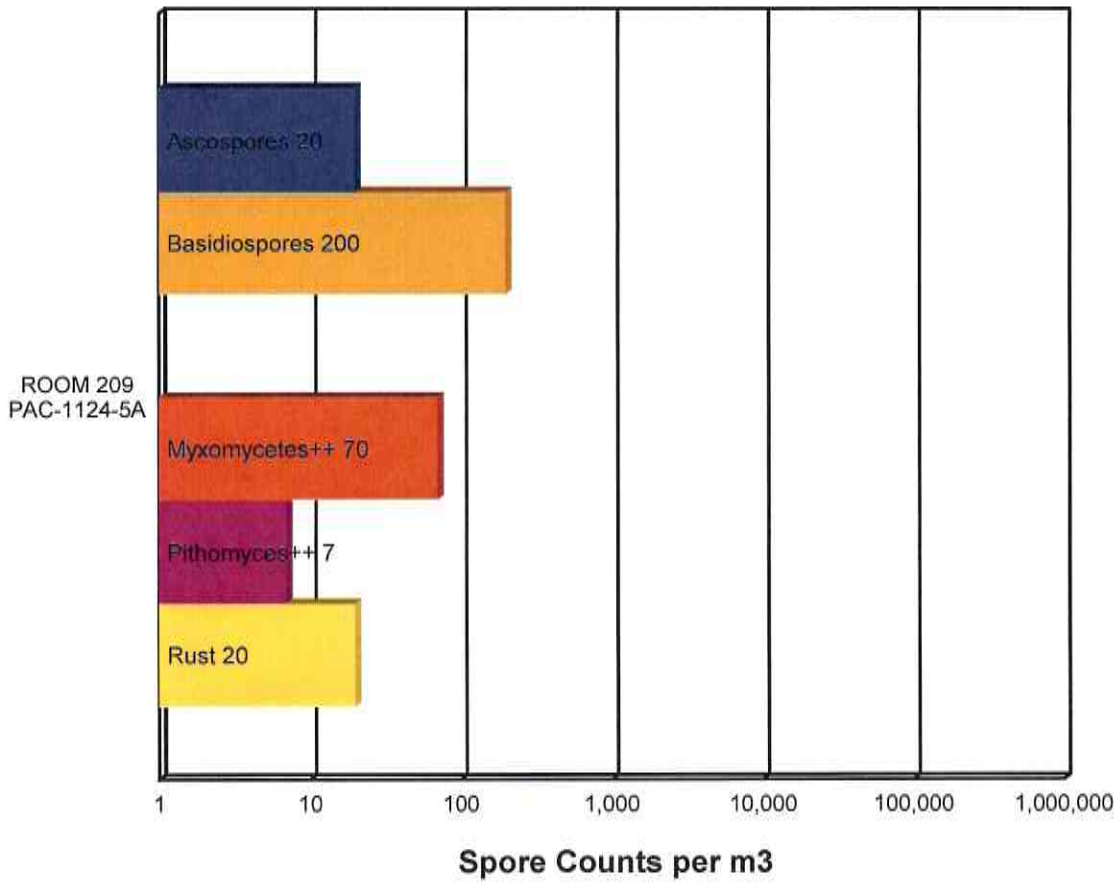
EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Web: http://www.EMSL.com Email:manhattanlab@emsl.com

Attn: Stephen Jaraczewski
Detail Associates, Inc.
560 Sylvan Avenue
Suite 3065
Englewood Cliffs, NJ 07632

Proj: NJ21-0423

EMSL Order:	032121723
Customer ID:	DETA50
Collected:	11/24/2021
Received:	11/29/2021
Analyzed:	11/30/2021

Spore Trap Report: Total Counts



* The chart is displayed using a logarithmic scale. Bar size is not directly proportional to the number of spores.

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.
© 2006,EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

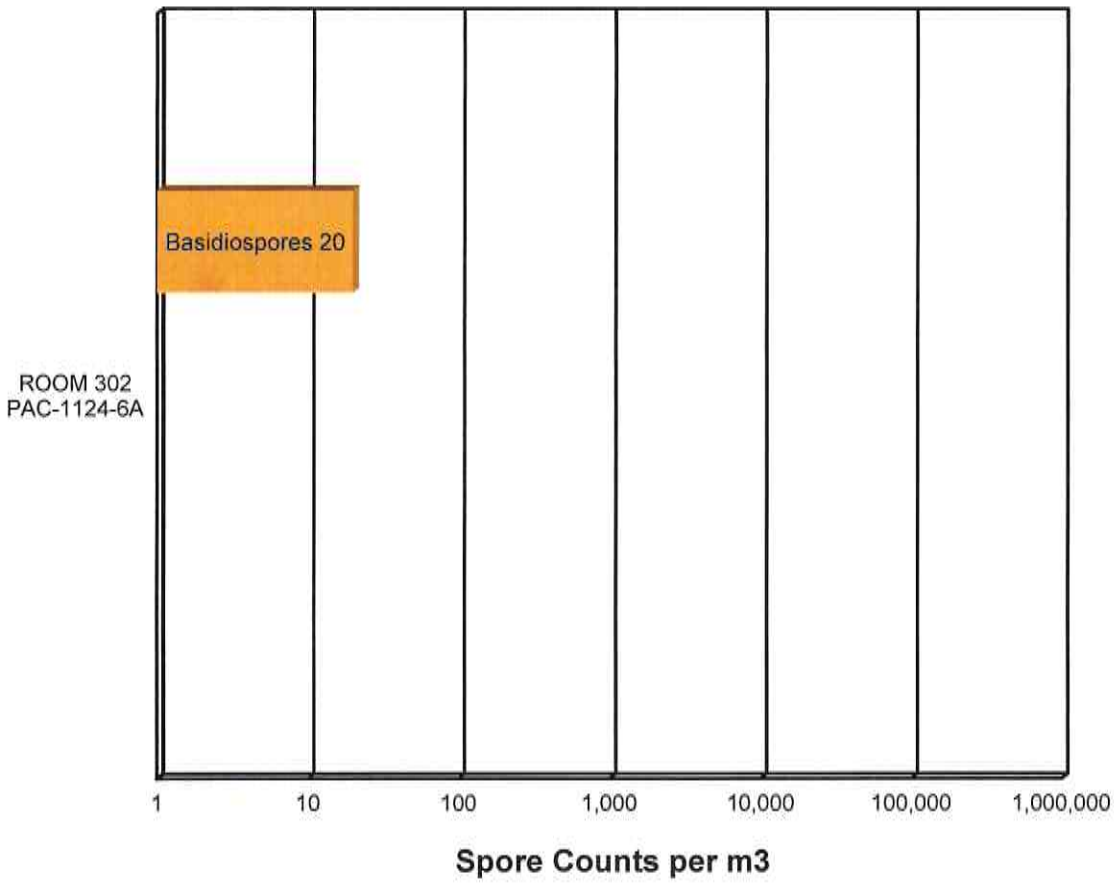
EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Web: http://www.EMSL.com Email:manhattanlab@emsl.com

Attn: Stephen Jaraczewski
Detail Associates, Inc.
560 Sylvan Avenue
Suite 3065
Englewood Cliffs, NJ 07632

Proj: NJ21-0423

EMSL Order:	032121723
Customer ID:	DETA50
Collected:	11/24/2021
Received:	11/29/2021
Analyzed:	11/30/2021

Spore Trap Report: Total Counts



* The chart is displayed using a logarithmic scale. Bar size is not directly proportional to the number of spores.

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.
© 2006,EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

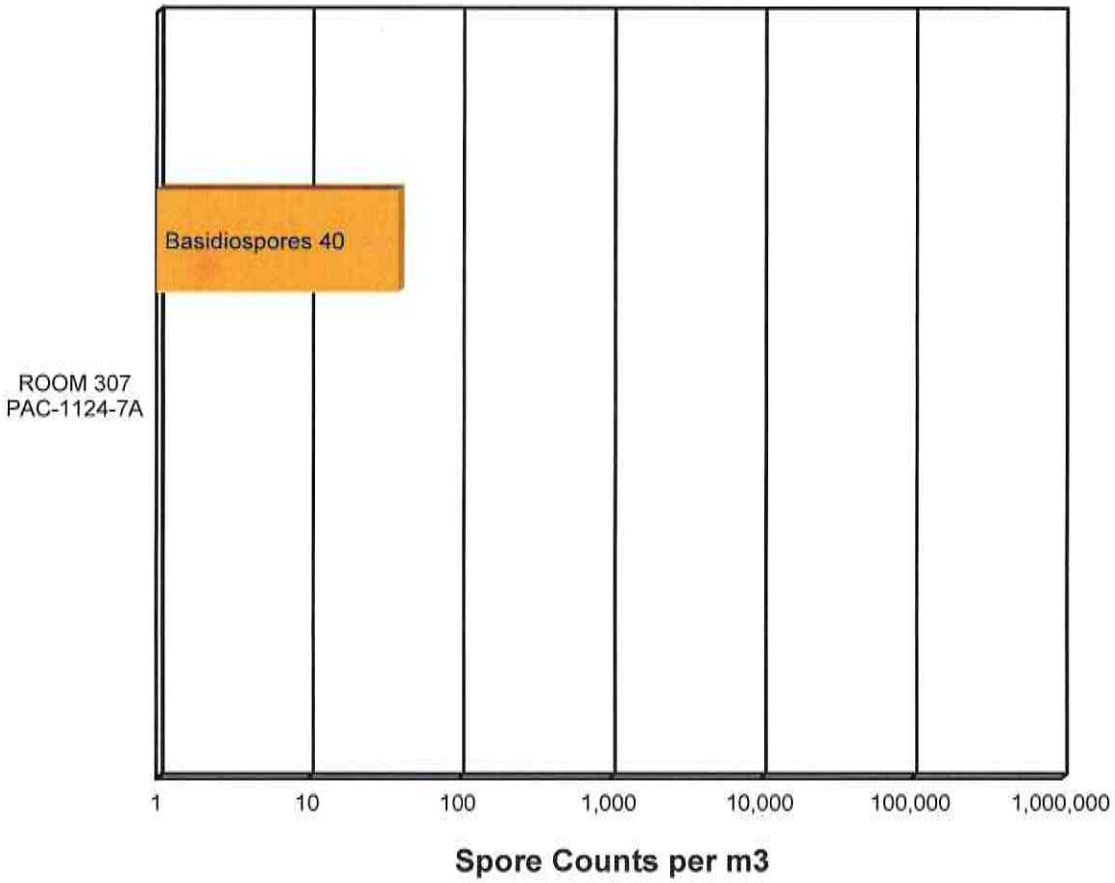
EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Web: http://www.EMSL.com Email:manhattanlab@emsl.com

Attn: Stephen Jaraczewski
Detail Associates, Inc.
560 Sylvan Avenue
Suite 3065
Englewood Cliffs, NJ 07632

Proj: NJ21-0423

EMSL Order:	032121723
Customer ID:	DETA50
Collected:	11/24/2021
Received:	11/29/2021
Analyzed:	11/30/2021

Spore Trap Report: Total Counts



* The chart is displayed using a logarithmic scale. Bar size is not directly proportional to the number of spores.

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.
© 2006,EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

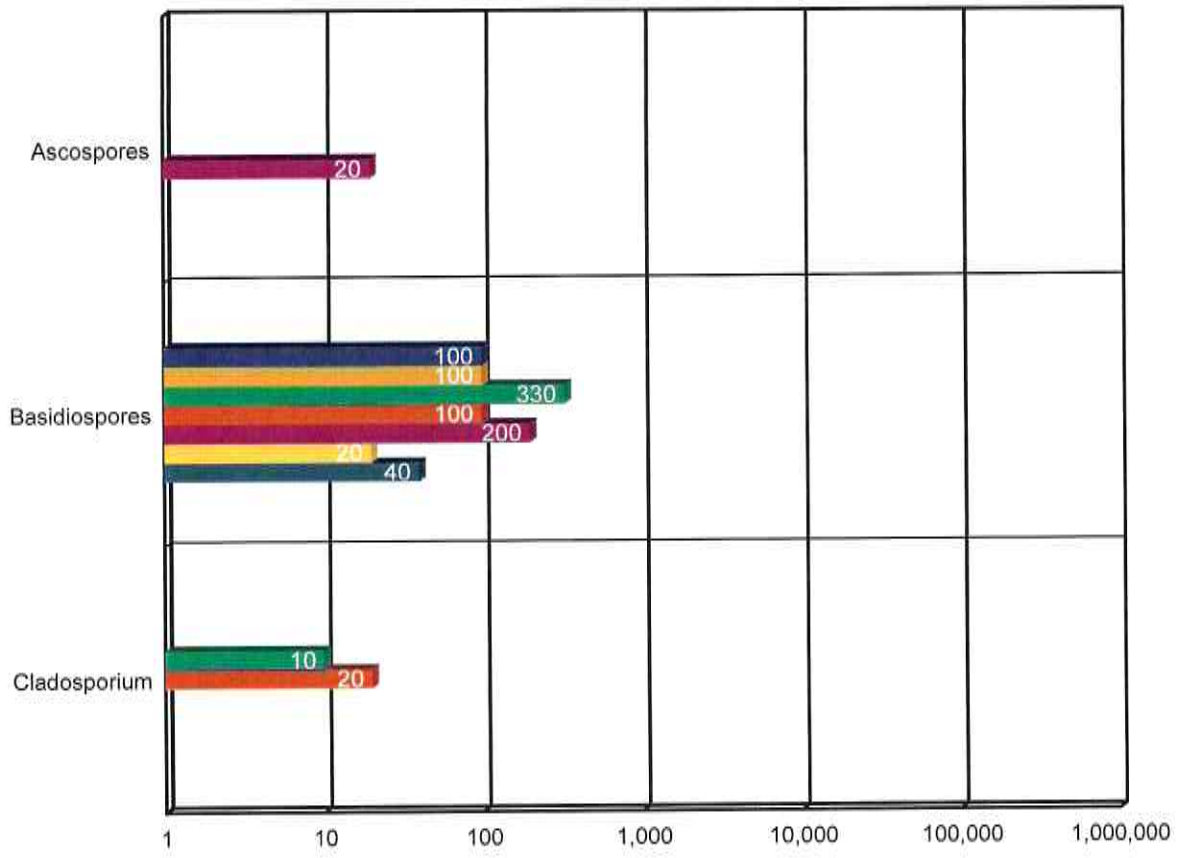
EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Web: http://www.EMSL.com Email:manhattanlab@emsl.com

Attn: Stephen Jaraczewski
Detail Associates, Inc.
560 Sylvan Avenue
Suite 3065
Englewood Cliffs, NJ 07632

Proj: NJ21-0423

EMSL Order: 032121723
Customer ID: DETA50
Collected: 11/24/2021
Received: 11/29/2021
Analyzed: 11/30/2021

Background Comparison Chart



* The chart is displayed using a logarithmic scale. The bar size is not directly proportional to the number of spores.

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.
© 2006,EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

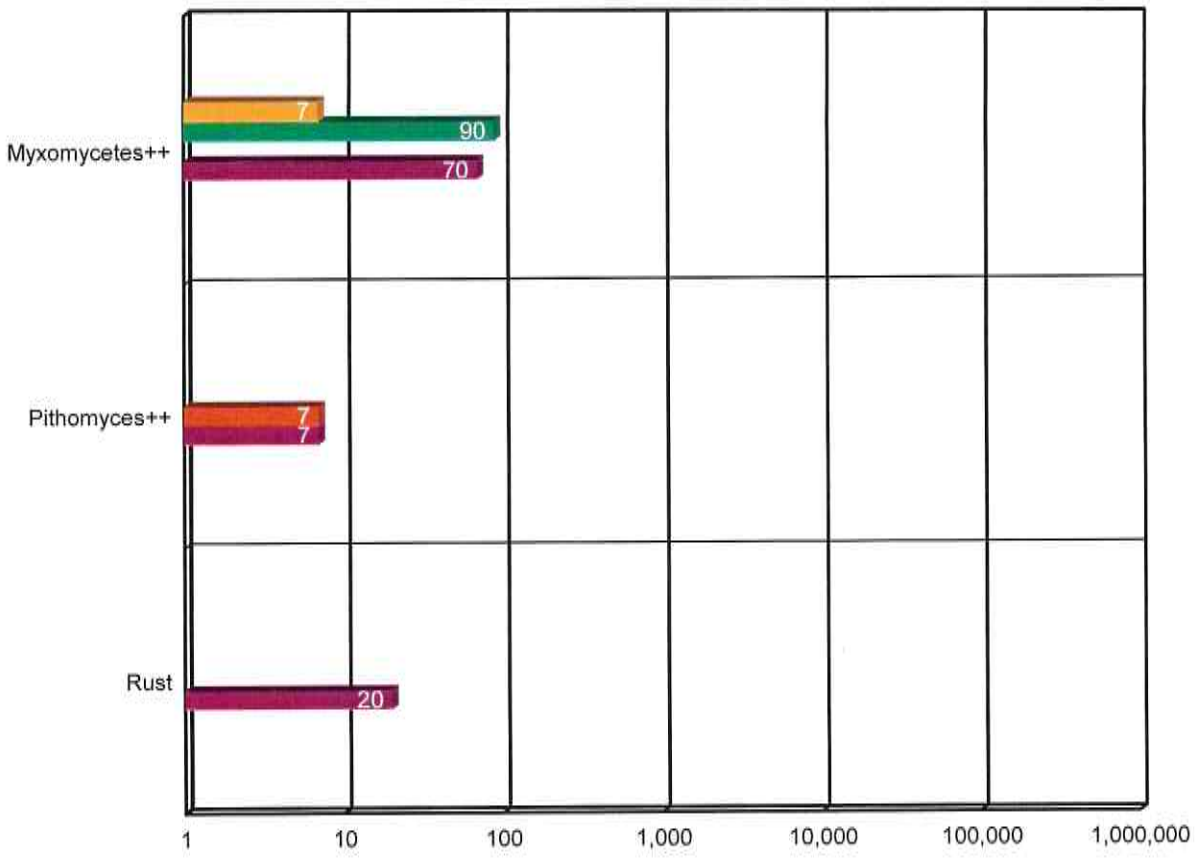
EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Web: http://www.EMSL.com Email:manhattanlab@emsl.com

Attn: Stephen Jaraczewski
Detail Associates, Inc.
560 Sylvan Avenue
Suite 3065
Englewood Cliffs, NJ 07632

Proj: NJ21-0423

EMSL Order: 032121723
Customer ID: DETA50
Collected: 11/24/2021
Received: 11/29/2021
Analyzed: 11/30/2021

Background Comparison Chart



* The chart is displayed using a logarithmic scale. The bar size is not directly proportional to the number of spores.

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.
© 2006,EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Web: http://www.EMSL.com Email:manhattanlab@emsl.com

Attn: Stephen Jaraczewski
Detail Associates, Inc.
560 Sylvan Avenue
Suite 3065
Englewood Cliffs, NJ 07632

Proj: NJ21-0423

EMSL Order:	032121723
Customer ID:	DETA50
Collected:	11/24/2021
Received:	11/29/2021
Analyzed:	11/30/2021

3. Understanding the Results

EMSL Analytical, Inc. is an independent laboratory, providing unbiased and scientifically valid results. These data represent only a portion of an overall IAQ investigation. Visual information and environmental conditions measured during the site assessment (humidity, moisture readings, etc.) are crucial to any final interpretation of the results. Many factors impact the final results; therefore, result interpretation should only be conducted by qualified individuals. The American Conference of Governmental Industrial Hygienists (ACGIH) has published a good reference book covering sampling and data interpretation. It is entitled, Bioaerosols: Assessment and Control, 1999.

Fungal spores are found everywhere. Whether or not symptoms develop in people exposed to fungi depends on the nature of the fungal material (e.g., allergenic, toxic, or infectious), the exposure level, and the susceptibility of exposed persons. Susceptibility varies with the genetic predisposition (e.g., allergic reactions do not always occur in all individuals), age, pre-existing medical conditions (e.g., diabetes, cancer, or chronic lung conditions), use of immunosuppressive drugs, and concurrent exposures. These reasons make it difficult to identify dose/response relationships that are required to establish "safe" or "unsafe" levels (i.e., permissible exposure limits).

It is generally accepted in the industry that indoor fungal growth is undesirable and inappropriate, necessitating removal or other appropriate remedial actions. The New York City guidelines and EPA guidelines for mold remediation in schools and commercial buildings define the conditions warranting mold remediation. Always remember that water is the key. Preventing water damage or water condensation will prevent mold growth.

This report is not intended to provide medical advice or advice concerning the relative safety of an occupied space. Always consult an occupational or environmental health physician who has experience addressing indoor air contaminants if you have any questions.

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.
© 2006,EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Web: http://www.EMSL.com Email:manhattanlab@emsl.com

Attn: Stephen Jaraczewski
Detail Associates, Inc.
560 Sylvan Avenue
Suite 3065
Englewood Cliffs, NJ 07632

Proj: NJ21-0423

EMSL Order:	032121723
Customer ID:	DETA50
Collected:	11/24/2021
Received:	11/29/2021
Analyzed:	11/30/2021

4. Glossary of Fungi

ASCOSPORES	
Natural Habitat	Everywhere in nature.
Suitable Substrates in the Indoor Environment	Depends on genus and species.
Water Activity	Depends on genus and species.
Mode of Dissemination	Forcible ejection or passive release and dissemination by wind or insects.
Allergic Potential	Depends on genus and species.
Potential or Opportunistic Pathogens	Depends on genus and species.
Industrial Uses	Depends on genus and species.
Potential Toxins Produced	Depends on genus and species.
Other Comments	Ascospores are the result of sexual reproduction and produced in a saclike structure called an ascus. All ascospores belong to members of the Phylum Ascomycota, which encompasses a plethora of genera worldwide.

BASIDIOSPORES	
Natural Habitat	Forest floors. Lawns .Plants (saprobes or pathogens depending on genus)
Suitable Substrates in the Indoor Environment	Depends on genus. Wood products
Water Activity	Unknown.
Mode of Dissemination	Forcible ejection. Wind currents.
Allergic Potential	Type I allergies (hay fever, asthma) . Type III (hypersensitivity pneumonitis)
Potential or Opportunistic Pathogens	Depends on genus.
Industrial Uses	Edible mushrooms are used in the food industry.
Potential Toxins Produced	Amanitins. monomethyl-hydrazine. muscarine. ibotenic acid. psilocybin.
Other Comments	Basidiospores are the result of sexual reproduction and formed on a structure called the basidium. Basidiospores belong to the members of the Phylum Basidiomycota, which includes mushrooms, shelf fungi, rusts, and smuts.

CLADOSPORIUM	
Natural Habitat	Dead plant matter. Straw. Soil. Woody plants
Suitable Substrates in the Indoor Environment	Fiberglass duct liner. Paint. Textiles. Found in high concentration in water-damaged building materials.
Water Activity	Aw 0.84-0.88
Mode of Dissemination	Air
Allergic Potential	Type I (asthma and hay fever).
Potential or Opportunistic Pathogens	Edema. keratitis. onychomycosis. pulmonary infections. Sinusitis.
Industrial Uses	Produces 10 antigens.
Potential Toxins Produced	Cladosporin and Emodin.

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.
© 2006 EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Web: http://www.EMSL.com Email:manhattanlab@emsl.com

Attn: Stephen Jaraczewski
Detail Associates, Inc.
560 Sylvan Avenue
Suite 3065
Englewood Cliffs, NJ 07632

Proj: NJ21-0423

EMSL Order:	032121723
Customer ID:	DETA50
Collected:	11/24/2021
Received:	11/29/2021
Analyzed:	11/30/2021

MYXOMYCETES++	
Natural Habitat	Decaying logs, Dead leaves , Dung , Lawns , Mulched flower beds, Lawns
Suitable Substrates in the Indoor Environment	Rotting lumber
Free moisture required for mold growth	Unknown
Mode of Dissemination	Insects, Water, Wind
Allergic Potential	Type I
Potential or Opportunistic Pathogens	Unknown
Industrial Uses	
Other Comments	Includes Myxomycetes, Smut, Rust, and Periconia.

PITHOMYCES++	
Natural Habitat	A worldwide saprophytic fungi, being isolated from dead plant material and soil.
Suitable Substrates in the Indoor Environment	Paper
Water Activity	Requires high moisture for spore germination
Mode of Dissemination	Wind
Allergic Potential	Unknown
Potential or Opportunistic Pathogens	Mycosis in immunocompromised patients
Other Comments	Pithomyces++ includes spores of Pithomyces and Pseudopithomyces.

RUSTS	
Natural Habitat	Parasitic on cultivated and many types of plants
Suitable Substrates in the Indoor Environment	Unknown- rust fungi require a living plant host for growth
Free moisture required for mold growth	Unknown
Mode of Dissemination	Wind, Forcible Ejection
Allergic Potential	Type I. (hay fever, asthma)
Potential or Opportunistic Pathogens	Unknown

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.
© 2006,EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Web: http://www.EMSL.com Email:manhattanlab@emsl.com

Attn: Stephen Jaraczewski
Detail Associates, Inc.
560 Sylvan Avenue
Suite 3065
Englewood Cliffs, NJ 07632

Proj: NJ21-0423

EMSL Order:	032121723
Customer ID:	DETA50
Collected:	11/24/2021
Received:	11/29/2021
Analyzed:	11/30/2021

5. References and Informational Links

Books

- Bioaerosols: Assessment and Control. Janet Macher, Ed., American Conference of Governmental Industrial Hygienists, Cincinnati, OH 1999.
- Exposure Guidelines for Residential Indoor Air Quality. Environmental Health Directorate, Health Protection Branch, Health Canada, Ottawa, Ontario, 1989.
- Fungal Contamination in Public Buildings: Health Effects and Investigation Methods. Health Canada, Ottawa, Ontario, 2004.
- IICRC: S500 Standard and Reference Guide for Professional Water Damage Restoration. 3rd Edition, Institute of Inspection, Cleaning, and Restoration Certification, Vancouver, WA, 2006

  IICRC: S520 Standard and Reference Guide for Professional Mold Remediation. 1st Edition, Institute of Inspection, Cleaning, and Restoration Certification, Vancouver, WA, 2004
- Field Guide for the Determination of Biological Contaminants in Environmental Samples. 2nd Edition, American Industrial Hygiene Association, 2005.

Consumer Links

Read the full text of AIHA's "The Facts About Mold" consumer brochure.
<http://www.aiha.org/get-involved/VolunteerGroups/Documents/BiosafetyVG-FactsAbout%20MoldDecember2011.pdf>

The Occupational Safety and Health Administration (OSHA)
http://www.osha.gov/SLTC/molds/index.html

CDC Mold Facts
http://www.cdc.gov/mold/faqs.htm

CDC Stachybotrys - Questions and answers on Stachybotrys chartarum and other molds
http://www.cdc.gov/mold/stachy.htm

IOM, NAS: Clearing the Air: Asthma and Indoor Air Exposures
https://www.epa.gov/indoor-air-quality-iaq/should-you-have-air-ducts-your-home-cleaned

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.
© 2006,EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

Attn: Stephen Jaraczewski
Detail Associates, Inc.
560 Sylvan Avenue
Suite 3065
Englewood Cliffs, NJ 07632

Proj: NJ21-0423

EMSL Order:	032121723
Customer ID:	DETA50
Collected:	11/24/2021
Received:	11/29/2021
Analyzed:	11/30/2021

National Library of Medicine-Mold website
http://www.nlm.nih.gov/medlineplus/molds.html

California Department of Health Services (CADOHS)
https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/Mold.aspx

Minnesota Department of Health
http://www.health.state.mn.us/divs/eh/indoorair/mold/index.html

New York City Department of Health and Mental Hygiene
https://www1.nyc.gov/site/doh/health/health-topics/mold.page

H.R.: The United States Toxic Mold Safety and Protection Act

EPA

"Should You Have the Air Ducts in Your Home Cleaned?"
<http://www.epa.gov/iaq/pubs/airduct.html>

General information about molds and actions that can be taken to clean up or prevent a mold problem.
<http://www.epa.gov/asthma/molds.html>

"A Brief Guide to Mold, Moisture, and Your Home" - Includes basic information on mold, cleanup guidelines, and moisture and mold prevention
http://www.epa.gov/mold/moldguide.html

"Mold Remediation in Schools and Commercial Buildings" - Information on remediation in schools and commercial property, references for potential mold and moisture remediators.
https://www.epa.gov/mold/mold-remediation-schools-and-commercial-buildings-guide

FEMA

"Homes That Were Flooded May Harbor Mold Problems" - Information and tips for cleaning mold.
http://www.fema.gov/news-release/homes-were-flooded-may-harbor-mold-problems

"Dealing With Mold & Mildew in Your Flood Damaged Home.
http://www.fema.gov/pdf/rebuild/recover/fema_mold_brochure_english.pdf

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.
© 2006,EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Phone: (212) 290-0051 Fax: (212) 290-0058 Web: http://www.EMSL.com Email:manhattanlab@emsl.com

Attn:	Stephen Jaraczewski	EMSL Order:	032121723
	Detail Associates, Inc.	Customer ID:	DETA50
	560 Sylvan Avenue	Collected:	11/24/2021
	Suite 3065	Received:	11/29/2021
	Englewood Cliffs, NJ 07632	Analyzed:	11/30/2021
Proj:	NJ21-0423		

6. Important Terms, Conditions, and Limitations

A. Sample Retention

Samples analyzed by EMSL will be retained for 60 days after analysis date Storage beyond this period is available for a fee with written request prior to the initial 30 day period. Samples containing hazardous/toxic substances which require special handling will be returned to the client immediately. EMSLreserves the right to charge a sample disposal fee or return samples to the client.

B. Change Orders and Cancellation

All changes in the scope of work or turnaround time requested by the client after sample acceptance must be made in writing and confirmed in writing by EMSL. If requested changes result in a change in cost the client must accept payment responsibility. In the event work is cancelled by a client, EMSL will complete work in progress and invoice for work completed to the point of cancellation notice. EMSL is not responsible for. holding times that are exceeded due to such changes.

C. Warranty

EMSL warrants to its clients that all services provided hereunder shall be performed in accordance with established and recognized analytical testing procedures and with reasonable care in accordance with applicable federal, state and local laws. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied. EMSL disclaims any other warranties, express or implied, including a warranty of fitness for particular purpose and warranty of merchantability.

D. Limits of Liability

In no event shall EMSL be liable for indirect, special, consequential, or incidental damages, including, but not limited to, damages for loss of profit or goodwill regardless of the negligence (either sole or concurrent) of EMSL and whether EMSL has been informed of the possibility of such damages, arising out of or in connection with EMSL's services thereunder or the delivery, use, reliance upon or interpretation of test results by client or any third party. We accept no legal responsibility for the purposes for which the client uses the test results. EMSL will not be held responsible for the improper selection of sampling devices even if we supply the device to the user. The user of the sampling device has the sole responsibility to select the proper sampler and sampling conditions to insure that a valid sample is taken for analysis. Any resampling performed will be at the sole discretion of EMSL, the cost of which shall be limited to the reasonable value of the original sample delivery group (SDG) samples. In no event shall EMSL be liable to a client or any third party, whether based upon theories

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.
© 2006,EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

Attn:	Stephen Jaraczewski	EMSL Order:	032121723
	Detail Associates, Inc.	Customer ID:	DETA50
	560 Sylvan Avenue	Collected:	11/24/2021
	Suite 3065	Received:	11/29/2021
	Englewood Cliffs, NJ 07632	Analyzed:	11/30/2021
Proj:	NJ21-0423		

of tort, contract or any other legal or equitable theory, in excess of the amount paid to EMSL by client thereunder.

E. Indemnification

Client shall indemnify EMSL and its officers, directors and employees and hold each of them harmless for any liability, expense or cost, including reasonable attorney's fees, incurred by reason of any third party claim in connection with EMSL services, the test result data or its use by client

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.
© 2006,EMSL Analytical, Inc., All rights reserved. No part of this report may be reproduced or otherwise distributed or used without the express written consent of EMSL.

APPENDIX II
IAQ FIELD DATA
CO_2, VOC, Temperature & Humidity

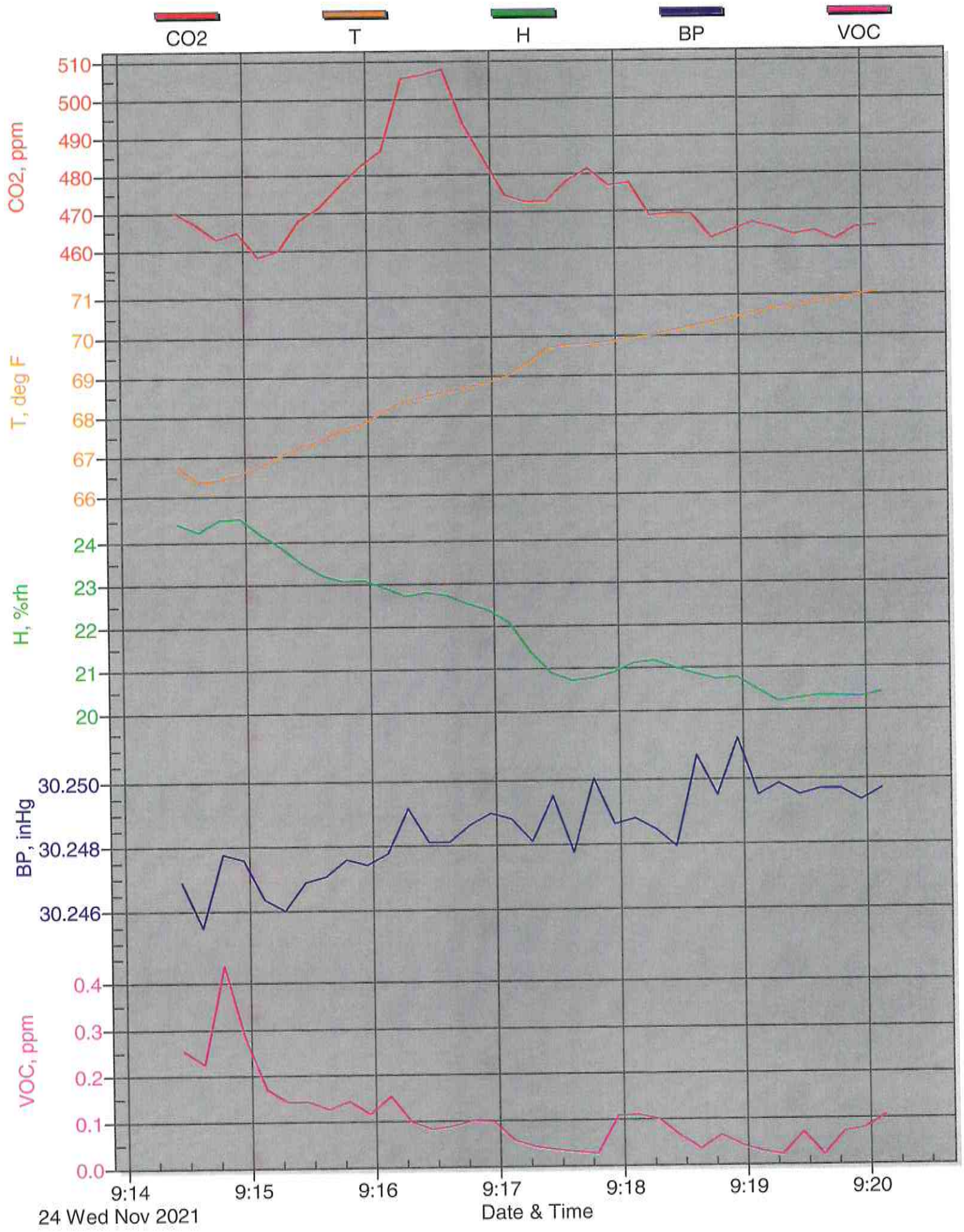
NJ21-0422 Palisades Park Board of Education - Lindbergh School - 401 Glen Ave, Palisades Park, NJ - Nov. 24, 2021

Test #	Location	CO2 ppm	Temp deg F	Humidity %rh	VOC ppm
Standard		1000 ppm			
1	Room 107	474	69.0	22.0	0.11
2	Room 108	460	72.2	17.3	0.00
3	Room 204	458	70.5	19.0	0.00
4	Room 209	460	69.4	15.5	0.00
5	Room 302	477	71.5	16.4	0.00
6	Room 307	483	73.8	16.7	0.00

Detail Associates, Inc.
560 Sylvan Avenue, Suite 3065
Englewood Cliffs, NJ 07632
Stephen A. Jaraczewski

Palisades Park BOE - Lindbergh School - 401 Glen Ave, Palisades Park, NJ - Nov 24, 2021

Room 107



Test 001

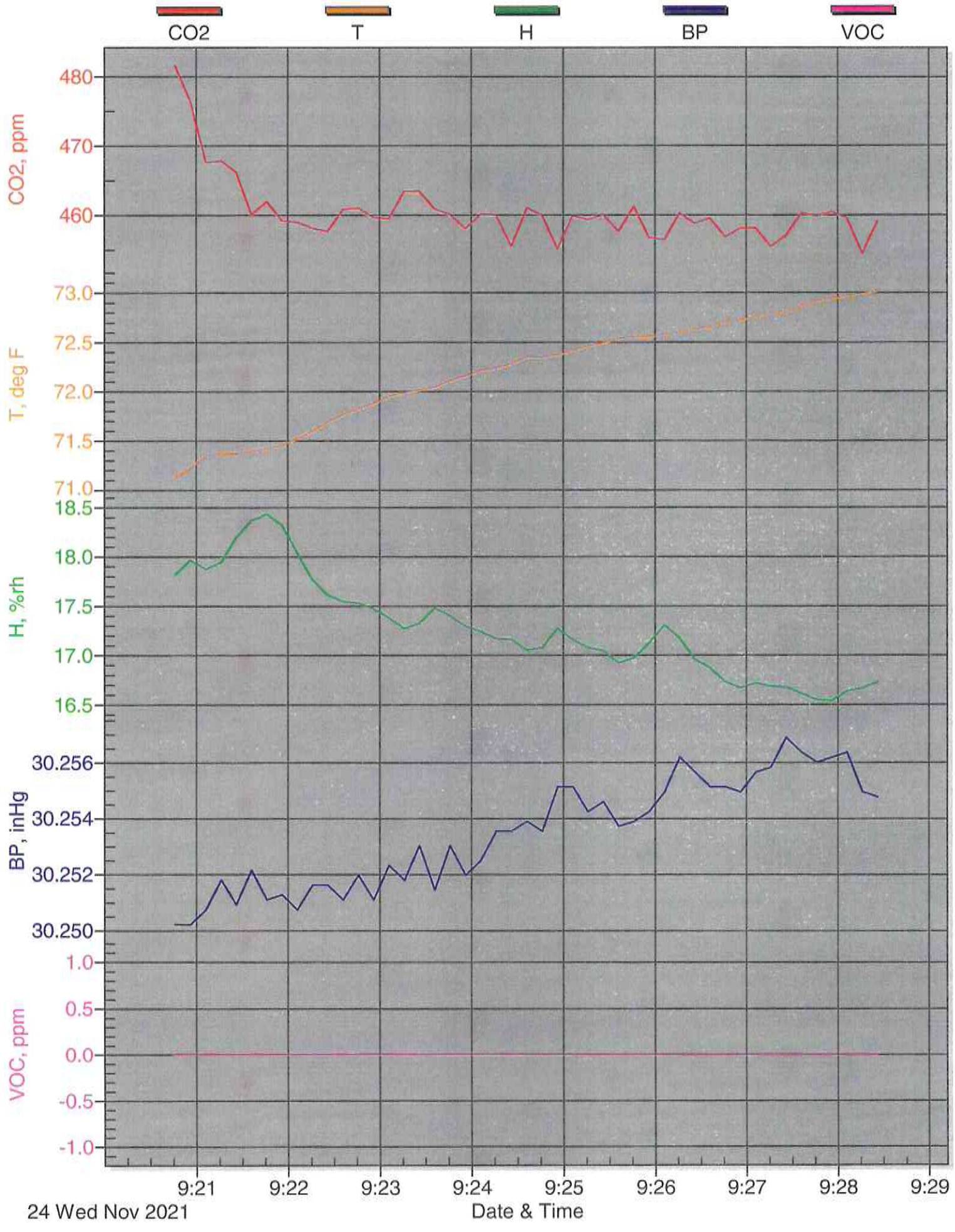
Test 001

Instrument		Data Properties	
Model	VelociCalc/Q-Trak 7575	Start Date	11/24/2021
Meter S/N	7575X1744001	Start Time	09:14:17
Probe Model	986	Stop Date	11/24/2021
Probe S/N	P20350005	Stop Time	09:20:07
Meter Cal Date	10/30/2017	Total Time	0:00:05:50
VOC Response Factor	1.000	Logging Interval	10 seconds
VOC Mole Weight	56.11		

Statistics					
	CO2	T	H	BP	VOC
Avg	474 ppm	69.0 deg F	22.0 %rh	30.25 inHg	0.11 ppm
Max	508 ppm	71.1 deg F	24.6 %rh	30.25 inHg	0.44 ppm
Max Date	11/24/2021	11/24/2021	11/24/2021	11/24/2021	11/24/2021
Max Time	09:16:37	09:20:07	09:14:57	09:18:57	09:14:47
Min	458 ppm	66.4 deg F	20.2 %rh	30.25 inHg	0.02 ppm
Min Date	11/24/2021	11/24/2021	11/24/2021	11/24/2021	11/24/2021
Min Time	09:15:07	09:14:37	09:19:17	09:14:37	09:19:37
TWA (8 hr)	N/A				N/A
TWA Start Date	11/24/2021				11/24/2021
TWA Start Time	09:14:17				09:14:17
TWA End Time	09:20:07				09:20:07

Palisades Park BOE - Lindbergh School - 401 Glen Ave, Palisades Park, NJ - Nov 24, 2021

Room 108



Test 002

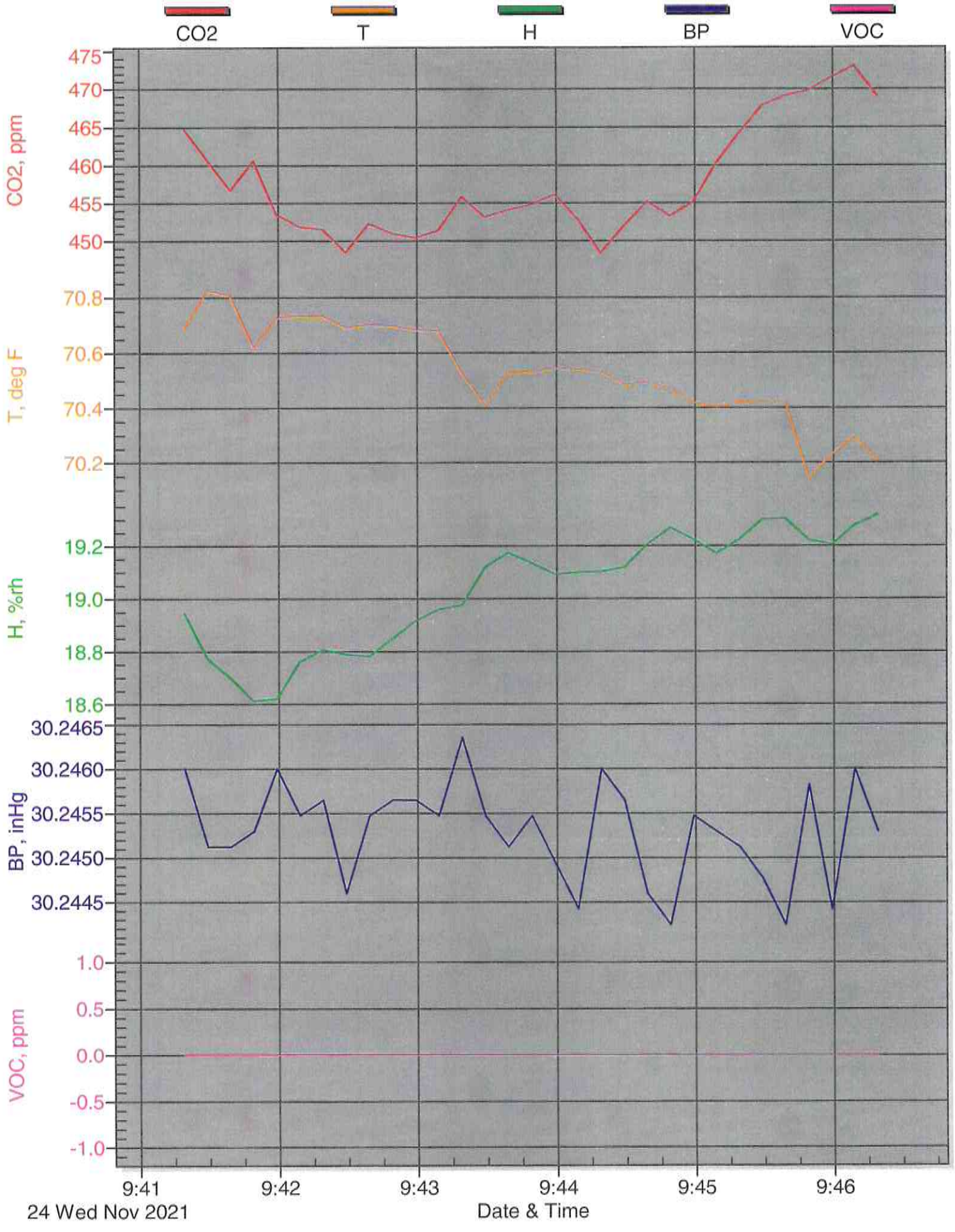
Test 002

Instrument		Data Properties	
Model	VelociCalc/Q-Trak 7575	Start Date	11/24/2021
Meter S/N	7575X1744001	Start Time	09:20:36
Probe Model	986	Stop Date	11/24/2021
Probe S/N	P20350005	Stop Time	09:28:26
Meter Cal Date	10/30/2017	Total Time	0:00:07:50
VOC Response Factor	1.000	Logging Interval	10 seconds
VOC Mole Weight	56.11		

Statistics					
	CO2	T	H	BP	VOC
Avg	460 ppm	72.2 deg F	17.3 %rh	30.25 inHg	0.00 ppm
Max	482 ppm	73.0 deg F	18.4 %rh	30.26 inHg	0.00 ppm
Max Date	11/24/2021	11/24/2021	11/24/2021	11/24/2021	11/24/2021
Max Time	09:20:46	09:28:26	09:21:46	09:27:26	09:20:46
Min	454 ppm	71.1 deg F	16.5 %rh	30.25 inHg	0.00 ppm
Min Date	11/24/2021	11/24/2021	11/24/2021	11/24/2021	11/24/2021
Min Time	09:28:16	09:20:46	09:27:56	09:20:56	09:20:46
TWA (8 hr)	N/A				N/A
TWA Start Date	11/24/2021				11/24/2021
TWA Start Time	09:20:36				09:20:36
TWA End Time	09:28:26				09:28:26

Palisades Park BOE - Lindbergh School - 401 Glen Ave, Palisades Park, NJ - Nov 24, 2021

Room 204



Test 003

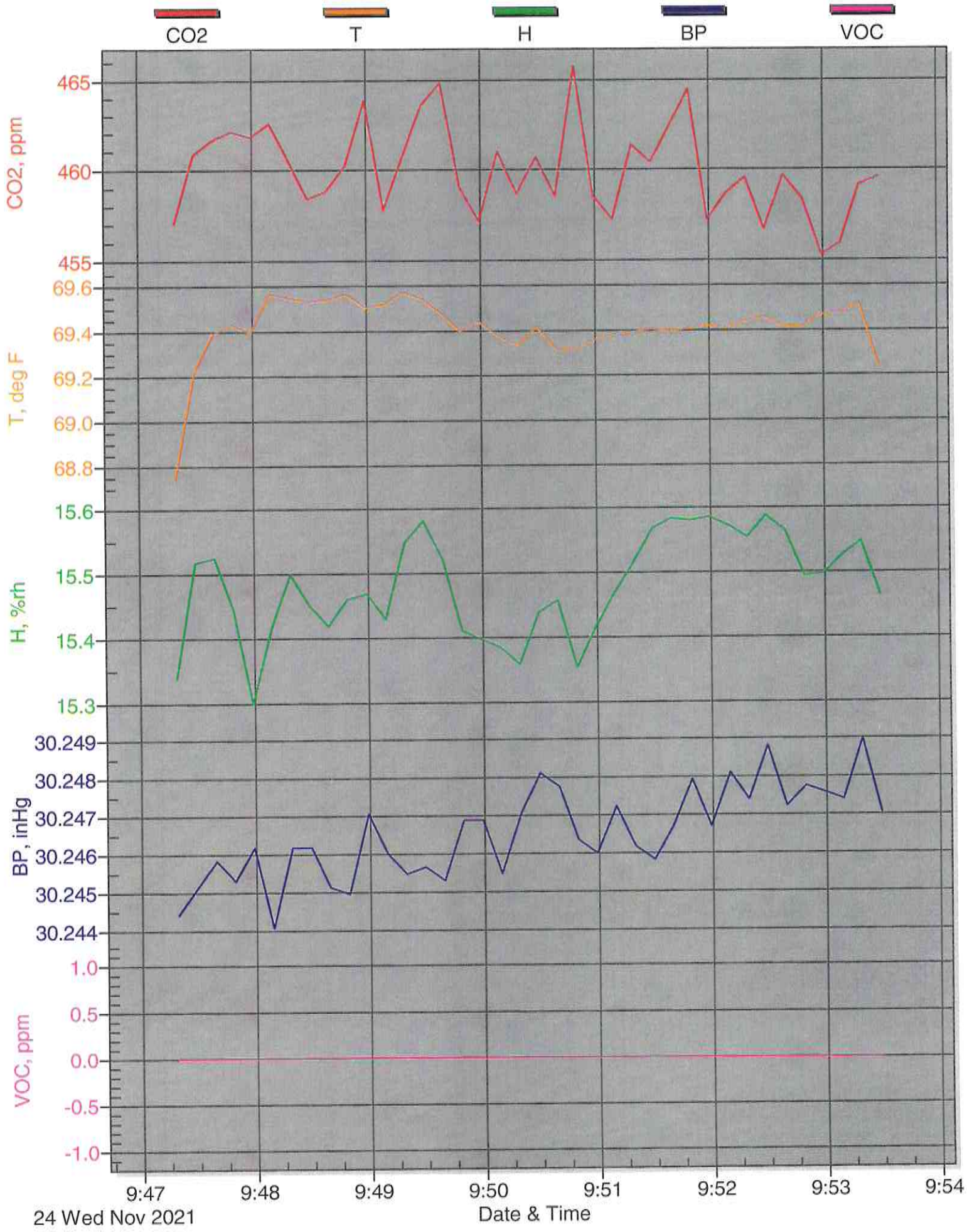
Test 003

Instrument		Data Properties	
Model	VelociCalc/Q-Trak 7575	Start Date	11/24/2021
Meter S/N	7575X1744001	Start Time	09:41:09
Probe Model	986	Stop Date	11/24/2021
Probe S/N	P20350005	Stop Time	09:46:19
Meter Cal Date	10/30/2017	Total Time	0:00:05:10
VOC Response Factor	1.000	Logging Interval	10 seconds
VOC Mole Weight	56.11		

Statistics					
	CO2	T	H	BP	VOC
Avg	458 ppm	70.5 deg F	19.0 %rh	30.25 inHg	0.00 ppm
Max	473 ppm	70.8 deg F	19.3 %rh	30.25 inHg	0.00 ppm
Max Date	11/24/2021	11/24/2021	11/24/2021	11/24/2021	11/24/2021
Max Time	09:46:09	09:41:29	09:46:19	09:43:19	09:41:19
Min	448 ppm	70.1 deg F	18.6 %rh	30.24 inHg	0.00 ppm
Min Date	11/24/2021	11/24/2021	11/24/2021	11/24/2021	11/24/2021
Min Time	09:44:19	09:45:49	09:41:49	09:44:49	09:41:19
TWA (8 hr)	N/A				N/A
TWA Start Date	11/24/2021				11/24/2021
TWA Start Time	09:41:09				09:41:09
TWA End Time	09:46:19				09:46:19

Palisades Park BOE - Lindbergh School - 401 Glen Ave, Palisades Park, NJ - Nov 24, 2021

Room 209



Test 004

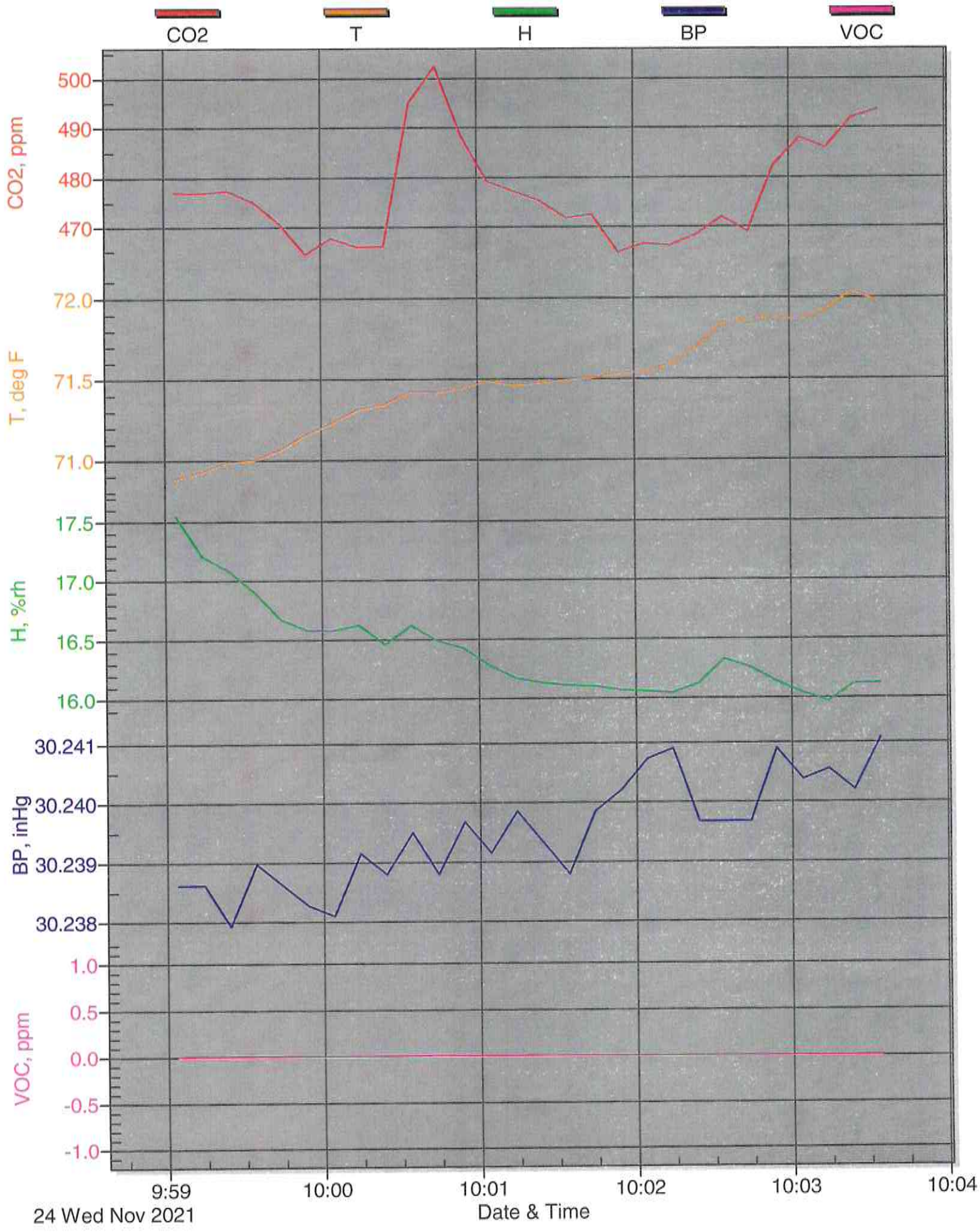
Test 004

Instrument		Data Properties	
Model	VelociCalc/Q-Trak 7575	Start Date	11/24/2021
Meter S/N	7575X1744001	Start Time	09:47:09
Probe Model	986	Stop Date	11/24/2021
Probe S/N	P20350005	Stop Time	09:53:29
Meter Cal Date	10/30/2017	Total Time	0:00:06:20
VOC Response Factor	1.000	Logging Interval	10 seconds
VOC Mole Weight	56.11		

Statistics					
	CO2	T	H	BP	VOC
Avg	460 ppm	69.4 deg F	15.5 %rh	30.25 inHg	0.00 ppm
Max	466 ppm	69.6 deg F	15.6 %rh	30.25 inHg	0.00 ppm
Max Date	11/24/2021	11/24/2021	11/24/2021	11/24/2021	11/24/2021
Max Time	09:50:49	09:49:19	09:52:29	09:53:19	09:47:19
Min	455 ppm	68.7 deg F	15.3 %rh	30.24 inHg	0.00 ppm
Min Date	11/24/2021	11/24/2021	11/24/2021	11/24/2021	11/24/2021
Min Time	09:52:59	09:47:19	09:47:59	09:48:09	09:47:19
TWA (8 hr)	N/A				N/A
TWA Start Date	11/24/2021				11/24/2021
TWA Start Time	09:47:09				09:47:09
TWA End Time	09:53:29				09:53:29

Palisades Park BOE - Lindbergh School - 401 Glen Ave, Palisades Park, NJ - Nov 24, 2021

Room 302



Test 005

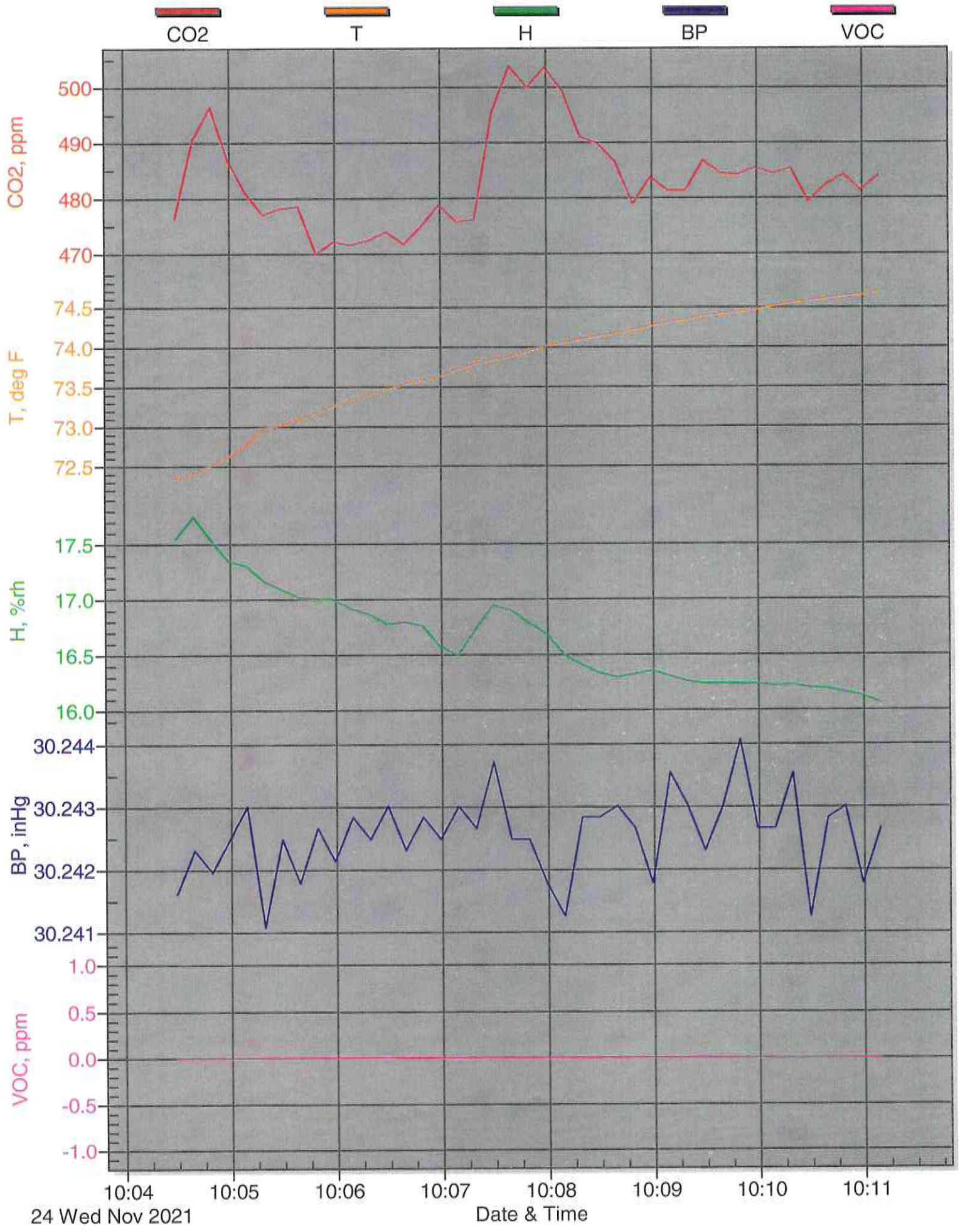
Test 005

Instrument		Data Properties	
Model	VelociCalc/Q-Trak 7575	Start Date	11/24/2021
Meter S/N	7575X1744001	Start Time	09:58:54
Probe Model	986	Stop Date	11/24/2021
Probe S/N	P20350005	Stop Time	10:03:34
Meter Cal Date	10/30/2017	Total Time	0:00:04:40
VOC Response Factor	1.000	Logging Interval	10 seconds
VOC Mole Weight	56.11		

Statistics					
	CO2	T	H	BP	VOC
Avg	477 ppm	71.5 deg F	16.4 %rh	30.24 inHg	0.00 ppm
Max	502 ppm	72.0 deg F	17.5 %rh	30.24 inHg	0.00 ppm
Max Date	11/24/2021	11/24/2021	11/24/2021	11/24/2021	11/24/2021
Max Time	10:00:44	10:03:24	09:59:04	10:03:34	09:59:04
Min	464 ppm	70.9 deg F	16.0 %rh	30.24 inHg	0.00 ppm
Min Date	11/24/2021	11/24/2021	11/24/2021	11/24/2021	11/24/2021
Min Time	09:59:54	09:59:04	10:03:14	09:59:24	09:59:04
TWA (8 hr)	N/A				N/A
TWA Start Date	11/24/2021				11/24/2021
TWA Start Time	09:58:54				09:58:54
TWA End Time	10:03:34				10:03:34

Palisades Park BOE - Lindbergh School - 401 Glen Ave, Palisades Park, NJ - Nov 24, 2021

Room 307



Test 006

Test 006

Instrument		Data Properties	
Model	VelociCalc/Q-Trak 7575	Start Date	11/24/2021
Meter S/N	7575X1744001	Start Time	10:04:19
Probe Model	986	Stop Date	11/24/2021
Probe S/N	P20350005	Stop Time	10:11:09
Meter Cal Date	10/30/2017	Total Time	0:00:06:50
VOC Response Factor	1.000	Logging Interval	10 seconds
VOC Mole Weight	56.11		

Statistics					
	CO2	T	H	BP	VOC
Avg	483 ppm	73.8 deg F	16.7 %rh	30.24 inHg	0.00 ppm
Max	504 ppm	74.7 deg F	17.7 %rh	30.24 inHg	0.00 ppm
Max Date	11/24/2021	11/24/2021	11/24/2021	11/24/2021	11/24/2021
Max Time	10:07:39	10:11:09	10:04:39	10:09:49	10:04:29
Min	470 ppm	72.3 deg F	16.1 %rh	30.24 inHg	0.00 ppm
Min Date	11/24/2021	11/24/2021	11/24/2021	11/24/2021	11/24/2021
Min Time	10:05:49	10:04:29	10:11:09	10:05:19	10:04:29
TWA (8 hr)	N/A				N/A
TWA Start Date	11/24/2021				11/24/2021
TWA Start Time	10:04:19				10:04:19
TWA End Time	10:11:09				10:11:09