



952 School Street #111
Napa, CA 94559
707-205-5706
mmichie@fitenvironmental.com

February 4, 2020

Mr. Jaime Rico
Cabrillo Unified School District
498 Kelly Avenue
Half Moon Bay, CA 94109

**RE: Spores in Air Comparison Sampling at Farallone View Elementary School
Library located at 1100 Le Conte Ave. in Montara, California**

F.I.T. Job # 20-016

Dear Mr. Rico,

F.I.T. Environmental Services (FIT) is pleased to present this letter report for the reporting of spores in air comparison sampling performed at Farallone View Elementary School inside the Multi-Purpose Room, Principals Office, Classrooms A-4, B-3, B-5, C-1, Library, D-2 and D-5 located at 1100 Le Conte Ave. in Montara, California.

Overview

On January 31, 2020, FIT mobilized to the above-mentioned site to collect microbial spores in air samples from the locations designated above and outside the building. The sampling was conducted at the request of the Cabrillo Unified School District.

Methodology

Airborne mold spore sampling was accomplished by using a spore trap method. Air O Cell/Allergenco cassettes were used to collect approximately 75 liters of air at a calibrated flow rate of 15 liters per minute. Air O Cell/Allergenco samples provide rapid collection and analysis by microscopic examination and allow identification of fungal spores, plant pollens and other particulates. Airborne particulate is collected by the spore trap cassette and analyzed by the non-viable, direct microscopic examination method. Spores are counted and identified by species type. Results are expressed in spores per cubic meter of air sampled. Samples are collected both inside the building areas to be evaluated and at one or more locations outside the building. The inside building sample results are compared with the outside ambient air result(s) to determine if any elevated levels are present for one or more spore types in the building area of concern.

Typically, in buildings with a filtered HVAC system, interior samples in a normal non-problem building would be anticipated to be 30-80% of the outside levels. Indoor levels that are significantly higher than outdoor levels would suggest an indoor mold contamination source may be present requiring further investigation and possible remedial action.

All samples were sent to Micro Analytical Laboratories (MAL), located in Emeryville, California for analysis under chain of custody procedures. MAL specializes in air sample analysis of fungi (mold) and is a successful participant in the American Industrial Hygiene Association (AIHA) EMPAT proficiency program.

Results of Comparison Sampling and Recommendations

The January 31, 2020 samples collected inside the Multi-Purpose Room, Principals Office, Library, and Classrooms were reported by the laboratory as follows, Spore counts in the Multi-Purpose Room were 1,867 total spores per cubic meter of air (spores/m³), Spore Counts in the Principal's Office were 373 total spores/m³, Spore Counts in Classroom A-4 were 1,573 total spores/m³, Spore Counts in Classroom B-3 were 5,413 total spores/m³, Spore Counts in Classroom B-5 were 4,280 total spores/m³, Spore Counts in Classroom C-1 were 1,147 total spores/m³, Spore Counts in the Library were 227 total spores/m³, Spore Counts in Classroom D-2 were 2,267 total spores/m³, Spore Counts in Classroom D-5 were 133 total spores/m³. Outside comparison spore counts were 20,827 total spores/m³. All the individual species were below their counterpart outdoor species except for Penicillium/Aspergillus, which was found in the Multi-Purpose Room, Principal's Office, Classroom B-3, and Classroom C-1 at elevated levels. No Penicillium/Aspergillus spores were detected outdoors. The results are summarized in Table I below.

Table I

Sampling Location and Date	Total Spores/m ³	% of Outdoor
Multi-Purpose Room – 1/31/2020	1,867	9%
Principal's Office	373	2%
Classroom A-4	1,573	8%
Classroom B-3	5,413	26%
Classroom B-5	4,280	21%
Classroom C-1	1,147	6%
Library	227	1%
Classroom D-2	2,267	11%
Classroom D-5	133	<1%
Outside the Building	20,827	N/A

Recommendations

Based upon the 1/31/2020 certified laboratory report of spore trap samples collected at the above locations, F.I.T. Environmental Services recommends that further investigation be performed of the areas where the Penicillium/Aspergillus species were elevated (over 1 spore/m³. Cleaning of all surfaces with a high efficiency particulate air (HEPA) filtered vacuum and scrubbing the air with HEPA filtered air scrubbers for 24 hours followed by re-sampling to determine if individual species indoors are below the respective outdoor counterparts.

Conclusion

Based upon the 1/31/2020 certified laboratory report of the air samples conducted at Farallone View Elementary School, F.I.T. Environmental Services has determined that the indoor air quality is NOT that of a “normal building environment” in the Multi-Purpose Room, Principal’s Office, Classroom B-3 and Classroom C-1. The other rooms sampled would fit the criterion of a “normal building environment” in accordance with industry standard indoor air quality protocols and state of the art indoor air quality assessment.

FIT appreciates the opportunity to provide our microbial services. Please contact Michael Michie at (707) 205-5706 if you have any questions.

Respectfully submitted,



A handwritten signature in black ink, appearing to read "Patrick Garrett".

Patrick Garrett, CAC (# 15-5359) CDPH (#110)
Certified Commercial Mold Inspector
Vice President/Principal Consultant

A handwritten signature in black ink, appearing to read "Michael Michie".

Michael Michie, CAC (#11-4729)
Certified Commercial Mold Inspector
President/Principal Consultant

Attachments: Certified Analytical Report
Chain of Custody

MICRO ANALYTICAL LABORATORIES, INC.

Air Sample Analysis - Non-Viable Spore Trap Report



1072

Michael Michie
 F.I.T. Services
 952 School Street, Unit #111
 Napa, CA 94559

PROJECT:

PROJECT NO. 20-016
 CUSD - FARALLONE VIEW E.S.

Micro Log In **268085**

Total Samples 10

Date Sampled 1/31/2020

Date Received 1/31/2020

Date Analyzed 1/31/2020

Sample ID Number	268085-01		268085-02		268085-03		268085-04	
	29529873		29529953		29529925		29530031	
Sample Description	MULTI-PURPOSE ROOM		PRINCIPAL OFFICE		CLASSROOM A-4		CLASSROOM B-3	
Volume (Liters)	75.0		75.0		75.0		75.0	
Spore Type	Count	Spores / m ³	Count	Spores / m ³	Count	Spores / m ³	Count	Spores / m ³
<i>Alternaria</i>								
<i>Arthrinium</i>								
Ascospores	19	253	1	13	11	147	17	227
Basidiospores	106	1,413	23	307	105	1,400	380	5,067
<i>Botrytis</i>								
<i>Chaetomium</i>								
<i>Cladosporium</i>	5	67	2	27	1	13	6	80
<i>Curvularia</i>								
<i>Drechslera / Bipolaris</i>								
<i>Epicoccum</i>								
<i>Fusarium</i>								
<i>Nigrospora</i>								
<i>Oidium</i>								
Penicillium / Aspergillus	10	133	2	27			3	40
<i>Pithomyces</i>								
Rusts					1	13		
Smuts, Periconia, Myxo.								
<i>Stachybotrys</i>								
<i>Stemphylium</i>								
<i>Torula</i>								
<i>Ulocladium</i>								
Unidentifiable								
Hyphae Fragments								
Total Spores / m³	1867		373		1573		5413	
Comments:	AS = 13.3 spores/m ³ .		AS = 13.3 spores/m ³ .		AS = 13.3 spores/m ³ .		AS = 13.3 spores/m ³ .	

Microbiology Manager:

Nasser Kashani, Ph.D.

2/1/2020

Date Reported

Analysts:

KG KG KG KG

AIHA-LAP, LLC EMLAP ACCREDITATION ID #101768. Samples are analyzed by light microscopy, using Micro Analytical Laboratories SOP F19-7 (equivalent to ASTM D7391-17). Explanations: 1) Spore count is calculated using fraction of the sample trace analyzed. The actual number of spores on the sample trace may vary. 2) Spores per m3 are extrapolated based on spore counts. The actual number may vary depending on chosen traverse and the fraction of sample analyzed. 3) The genera Aspergillus and Penicillium are placed in the same category. Spores of these fungi and others such as Gliocladium have little size variability and few distinguishing features. 4) A spore is unidentifiable when its morphological features are insufficient for conclusive identification. 5) Although spores are assumed to be randomly distributed on the sample trace, scarce spores may be present but not countable if not within the chosen traverse. 6) This analysis does not evaluate background debris; however, high levels of background particulates can obscure small spores (e.g., Penicillium / Aspergillus) and bias counts. Unless otherwise indicated on this report, all required Quality Control samples have been determined to be in control prior to releasing these results. Unless otherwise stated in this report, all samples were received in acceptable condition for analysis. This report must not be reproduced except in full, without the approval of Micro Analytical Laboratories, Inc., and pertains only to the samples analyzed. Micro Analytical Laboratories, Inc. shall not be responsible for clients' deviations from any prescribed sampling parameters. Air volumes are based on client data. The lab's verifiability of results is limited to spore counts. N/A = not applicable. Myxo = Myxomycetes. Results of ND (No Spores Detected) are reported as less than (<) the Analytical Sensitivity (AS), which is the concentration calculated from the lowest possible raw count, i.e. 1 spore. The Practical Quantitation Limit (PQL) is approximately four times the analytical sensitivity. Results are field-blank corrected where applicable.

MICRO ANALYTICAL LABORATORIES, INC.

Air Sample Analysis - Non-Viable Spore Trap Report



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Michael Michie
 F.I.T. Services
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 Napa, CA 94559

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PROJECT NO. 20-016
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Micro Log In **268085**


Total Samples 10

Date Sampled 1/31/2020

Date Received 1/31/2020

Date Analyzed 1/31/2020

Sample ID Number	268085-05		268085-06		268085-07		268085-08	
Sample Description	29530027		29529921		29529937		2937128	
	CLASSROOM B-5		CLASSROOM C-1		LIBRARY		CLASSROOM D-2	
Volume (Liters)	75.0		75.0		75.0		75.0	
Spore Type	Count	Spores / m ³	Count	Spores / m ³	Count	Spores / m ³	Count	Spores / m ³
<i>Alternaria</i>	1	13						
<i>Arthrinium</i>								
<i>Ascospores</i>	9	120	3	40			11	147
<i>Basidiospores</i>	305	4,067	74	987	15	200	153	2,040
<i>Botrytis</i>								
<i>Chaetomium</i>								
<i>Cladosporium</i>	4	53	1	13	2	27	5	67
<i>Curvularia</i>								
<i>Drechslera / Bipolaris</i>								
<i>Epicoccum</i>								
<i>Fusarium</i>								
<i>Nigrospora</i>								
<i>Oidium</i>								
<i>Penicillium / Aspergillus</i>	1	13	8	107			1	13
<i>Pithomyces</i>								
<i>Rusts</i>								
<i>Smuts, Periconia, Myxo.</i>								
<i>Stachybotrys</i>								
<i>Stemphylium</i>								
<i>Torula</i>								
<i>Ulocladium</i>								
<i>Unidentifiable</i>								
<i>Hyphae Fragments</i>	1	13						
Total Spores / m³		4280		1147		227		2267
Comments:	AS = 13.3 spores/m3.		AS = 13.3 spores/m3.		AS = 13.3 spores/m3.		AS = 13.3 spores/m3.	

Microbiology Manager: 
 Nasser Kashaani, Ph.D.

2/1/2020
 Date Reported

Analysts: NK NK NK NK

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Napa, CA 94559

PROJECT NO. 20-016
CUSD - FARALLONE VIEW E.S.

Micro Log In **268085**

Total Samples 10

Date Sampled 1/31/2020

Date Received 1/31/2020

Date Analyzed 1/31/2020

Sample ID Number	268085-09		268085-10					
	Count	Spores / m ³	Count	Spores / m ³	Count	Spores / m ³	Count	Spores / m ³
Sample Description	29160727 CLASSROOM D-5		29529954 OUTSIDE BUILDING					
Volume (Liters)	75.0		150.0					
Spore Type	Count	Spores / m ³	Count	Spores / m ³	Count	Spores / m ³	Count	Spores / m ³
<i>Alternaria</i>								
<i>Arthrinium</i>								
<i>Ascospores</i>			108	720				
<i>Basidiospores</i>	10	133	3,008	20,053				
<i>Botrytis</i>								
<i>Chaetomium</i>								
<i>Cladosporium</i>			8	53				
<i>Curvularia</i>								
<i>Drechslera / Bipolaris</i>								
<i>Epicoccum</i>								
<i>Fusarium</i>								
<i>Nigrospora</i>								
<i>Oidium</i>								
<i>Penicillium / Aspergillus</i>								
<i>Pithomyces</i>								
<i>Rusts</i>								
<i>Smuts, Periconia, Myxo.</i>								
<i>Stachybotrys</i>								
<i>Stemphylium</i>								
<i>Torula</i>								
<i>Ulocladium</i>								
<i>Unidentifiable</i>								
<i>Hyphae Fragments</i>								
Total Spores / m³		133		20827				
Comments:	AS = 13.3 spores/m ³ .		AS = 26.7 spores/m ³ .					

Microbiology Manager:

Nasser Kashani, Ph.D.

2/1/2020

Date Reported

Analysts:

NK NK

AIHA-LAP, LLC EMLAP ACCREDITATION ID #101768. Samples are analyzed by light microscopy, using Micro Analytical Laboratories SOP F19-7 (equivalent to ASTM D7391-17). Explanations: 1) Spore count is calculated using fraction of the sample trace analyzed. The actual number of spores on the sample trace may vary. 2) Spores per m3 are extrapolated based on spore counts. The actual number may vary depending on chosen traverser and the fraction of sample analyzed. 3) The genera *Aspergillus* and *Penicillium* are placed in the same category. Spores of these fungi and others such as *Gliocladium* have little size variability and few distinguishing features. 4) A spore is unidentifiable when its morphological features are insufficient for conclusive identification. 5) Although spores are assumed to be randomly distributed on the sample trace, scarce spores may be present but not countable if not within the chosen traverse. 6) This analysis does not evaluate background debris; however, high levels of background particulates can obscure small spores (e.g., *Penicillium / Aspergillus*) and bias counts. Unless otherwise indicated on this report, all required Quality Control samples have been determined to be in control prior to releasing these results. Unless otherwise stated in this report, all samples were received in acceptable condition for analysis. This report must not be reproduced except in full, without the approval of Micro Analytical Laboratories, Inc., and pertains only to the samples analyzed. Micro Analytical Laboratories, Inc. shall not be responsible for clients' deviations from any prescribed sampling parameters. Air volumes are based on client data. The lab's verifiability of results is limited to spore counts. N/A = not applicable. Myxo = Myxomycetes. Results of ND (No Spores Detected) are reported as less than (<) the Analytical Sensitivity (AS), which is the concentration calculated from the lowest possible raw count, i.e. 1 spore. The Practical Quantitation Limit (PQL) is approximately four times the analytical sensitivity. Results are field-blank corrected where applicable.

268085



Microbial SAMPLE DATA SHEET
PAGE 1 OF 2

952 School St. #111
Napa, CA 94559

Project Name/Address: Farallone View Elementary School Report Recipient: _____
 Client Name: CUSD F.I.T. Project #: 20-016 Sampled By: M. Michie/P. Garrett Sampling Date: 1-31-2020
 Sample(s) Sent To: MAL EM Lab Other: _____ Turnaround Time: _____ Rush Standard 2 Day

Email Report To: mmichie@fitenvironmental.com pgarrett@fitenvironmental.com

Sample I.D. #	Date	Type	Sample Description				Sample Location	Volume Liters	Culture	Culture Screen	Direct Exam	Legionella	Analysis
			Air	Bulk	Swab	Water							
1 29529873	1-31-	Spoore Trap	✓				Multi-use Room	75					
2 29529953	1-31	Spoore Trap	✓				Principal Office	75					
3 29529925	1-31	Spoore Trap	✓				Classroom A-4	75					
4 29530031	1-31	Spoore Trap	✓				Classroom B-3	75					
5 29530027	1-31	Spoore Trap	✓				Classroom B-5	75					
6 29529921	1-31	Spoore Trap	✓				Classroom C-1	75					
7 29529937	1-31	Spoore Trap	✓				Library	75					
8 2937128	1-31	Spoore Trap	✓				Classroom D-2	75					
9 29160727	1-31	Spoore trap	✓				Classroom P-5	75					

NAME: _____ DATE: _____
 SIGNATURE: _____
 REMARKS: _____

Relinquished By: Michael Michie 1-31-2020
 Received By: _____
 Relinquished By: _____
 Received By: _____

268085



952 School St. #111
Napa, CA 94559

Microbial SAMPLE DATA SHEET

PAGE 2 OF 2

Project Name/Address: Faralone View Elementary School

Report Recipient:

Client Name: CUSD F.I.T. Project #: 20-016 Sampled By: Mmichie/P Garrett

Sampling Date: 1-31-2020

Sample(s) Sent To: MAL EM Lab Other:

Turnaround Time: Rush Standard 2 DAY

Email Report To: mmichie@fitenvironmental.com pgarrett@fitenvironmental.com

Sample I.D. #	Date	Type	Sample Description				Sample Location	Volume Liters	Culture	Culture Screen	Direct Exam	Legionella	Analysis
			Air	Bulk	Swab	Water							
10 29529954	1-31	Spore Trap					outside Building	150					

NAME:

SIGNATURE:

DATE:

REMARKS:

Relinquished By:	<u>Michael Michal</u>	<u>Michael</u>	<u>1-31-2020</u>
Received By:		<u>Jye</u>	<u>1/31/20</u>
Relinquished By:			
Received By:			