



HYGIENETECH

Hygiene Technologies International, Inc.

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December 7, 2011

California State Board of Equalization
450 N Street
Sacramento, California 94279

Document No. 21111001.1

Attention: David Gau

Regarding: Limited Fungal Growth Exposure Assessment Survey
Day Care - Periodic Air Sampling

Dear Mr. Gau:

On November 7, 2011, industrial hygienists with Hygiene Technologies International, Inc. (HygieneTech) conducted a limited fungal growth exposure assessment survey involving the Day Care facility located within the California State Board of Equalization (BOE) building. The findings of the surveys, along with the analytical data, and conclusions appear below.

On the survey date, air samples were collected for total (viable and nonviable) fungi analyses using a Zefon brand Bio-Pump™ equipped with Air-O-Cell™ cassettes. All such samples were subsequently analyzed for fungi (including yeasts, molds, rusts, smuts, and mushrooms) by trained and experienced microbiologists at a laboratory accredited by the American Industrial Hygiene Association (AIHA) and that successfully participates in the AIHA Environmental Microbiology Proficiency Analytical Testing (EMPAT) Program.

As presented in Table 21111001-101, the airborne spore count data recorded on the survey date showed mostly common fungal spore types outdoors such as *Alternaria*, ascospores, basidiospores, *Bipolaris/Drechslera* group, *Cladosporium*, colorless spores typical of *Penicillium* and *Aspergillus* species, *Nigrospora*, *Pithomyces*, and/or smuts. In the Day Care areas tested, the data showed that airborne fungal spores were either not detected at or above the laboratory analytical detection limit indicated or were detected at very low airborne concentrations, with only smuts identified. The distribution of fungal spore type detected in the surveyed areas was consistent with those found outdoors, and the overall data within the tested areas were well below the overall data recorded outdoors. These data are considered unremarkable and are not believed to pose a health risk beyond that posed by the outdoor environment where exposures to airborne fungi are expected.

Be advised that the data provided in this report only represent limited fungal growth exposure potentials that existed at the time survey was performed and at the precise sample locations indicated, the latter of which were selected based on the available background information provided. Note that fungal growth and exposure potentials may change due to changes in environmental conditions (such as those caused by water intrusion), use of mechanical systems, or other factors. Also be advised that additional fungal

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growth may exist at one or more locations in the structure that were not specifically assessed during the survey.

If you have any comments or questions regarding the information contained in this correspondence, please feel free to contact our offices directly at (310) 370-8370.

Sincerely,

HYGIENE TECHNOLOGIES INTERNATIONAL, INC.



Kenny K. Hsi, CIH
Technical Director

HYGIENE TECHNOLOGIES INTERNATIONAL, INC.

APPENDIX A



CLIENT: California State Board of Equalization
450 N Street
Sacramento, California 94279

**TABLE 21111001-101
AIRBORNE TOTAL FUNGI RESULTS
DAY CARE
450 N STREET
SACRAMENTO, CALIFORNIA
NOVEMBER 7, 2011**

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Results reported in spores per cubic meter of air (spores/M³)

| SAMPLE NUMBER | 21109001-5 TM21OUT | 21109001-5 TM22 | 21109001-5 TM23 | 21109001-5 TM24 |
|---|---|---|--|---|
| SAMPLING LOCATION/ACTIVITIES | Outdoors; about 15 feet north of building; approximately five feet above ground/Normal outdoor activities | 1 st Floor; Day Care; hallway between restroom and kitchen; about center; approximately five feet above floor/Sampling activities only | 1 st Floor; Day Care; Pre-school area; about center; approximately five feet above floor/Sampling activities only | 1 st Floor; Day Care; reception area at entryway; about center; approximately five feet above floor/Sampling activities only |
| START/STOP | 18:11:00/18:16:00 | 18:37:00/18:42:00 | 18:43:00/18:48:00 | 18:49:00/18:54:00 |
| SAMPLE TIME | 5 minutes | 5 minutes | 5 minutes | 5 minutes |
| Alternaria | 27 | | | |
| Arthrinium | | | | |
| Ascospores | 210 | | | |
| Aureobasidium | | | | |
| Basidiospores | 910 | | | |
| Bipolaris/Drechslera group | 13 | | | |
| Botrytis | | | | |
| Chaetomium | | | | |
| Cladosporium | 1,600 | | | |
| Curvularia | | | | |
| Epicoccum | | | | |
| Fusarium | | | | |
| Nigrospora | 130 | | | |
| Oidium | | | | |
| Penicillium/Aspergillus types | | | | |
| Pithomyces | 13 | | | |
| Rusts | | | | |
| Smuts (Periconia, Myxomycetes) | 93 | 53 | 13 | |
| Stachybotrys | | | | |
| Torula | | | | |
| Zygomycetes | | | | |
| Hyphal fragments | 120 | <13 | <13 | <13 |
| Background debris* | 3+ | 2+ | <1+ | 1+ |
| TOTAL** | 3,000 | 53 | 13 | <13 |

*Background debris is an indication of the amount of non-biological particulate matter present on the slide and is graded (from least to greatest) as 1+ to 4+.

**Note that all reported counts have been rounded to no more than two significant figures based on the sampling and analytical methods used, and therefore the total count may not equal the sum of the individual counts in a column.

HYGIENE TECHNOLOGIES INTERNATIONAL, INC.

APPENDIX A



CLIENT: California State Board of Equalization
450 N Street
Sacramento, California 94279

TABLE 21111001-101
AIRBORNE TOTAL FUNGI RESULTS
DAY CARE
450 N STREET
SACRAMENTO, CALIFORNIA
NOVEMBER 7, 2011

Page 2

Results reported in spores per cubic meter of air (spores/M³)

| SAMPLE NUMBER | 21109001-5 TM25 | 21109001-5 TM26OUT | | |
|---------------------------------|---|---|--|--|
| SAMPLING LOCATION/ACTIVITIES | 1 st Floor; Day Care; Toddler dining area; about center; approximately five feet above floor/Sampling activities only | Outdoors; about 15 feet south of building; approximately five feet above ground/Normal outdoor activities | This column intentionally left blank. | This column intentionally left blank. |
| START/STOP | 18:55:00/19:00:00 | 19:05:00/19:10:00 | | |
| SAMPLE TIME | 5 minutes | 5 minutes | | |
| Alternaria | | 40 | | |
| Arthrinium | | | | |
| Ascospores | | 430 | | |
| Aureobasidium | | | | |
| Basidiospores | | 1,100 | | |
| Bipolaris/Drechslera group | | 13 | | |
| Botrytis | | | | |
| Chaetomium | | | | |
| Cladosporium | | 1,100 | | |
| Curvularia | | | | |
| Epicoccum | | | | |
| Fusarium | | | | |
| Nigrospora | | 130 | | |
| Oidium | | | | |
| Penicillium/Aspergillus types | | 370 | | |
| Pithomyces | | | | |
| Rusts | | | | |
| Smuts (Periconia, Myxomycetes) | | 130 | | |
| Stachybotrys | | | | |
| Torula | | | | |
| Zygomycetes | | | | |
| Hyphal fragments | <13 | 53 | | |
| Background debris* | <1+ | 3+ | | |
| TOTAL** | <13 | 3,300 | | |

*Background debris is an indication of the amount of non-biological particulate matter present on the slide and is graded (from least to greatest) as 1+ to 4+.

**Note that all reported counts have been rounded to no more than two significant figures based on the sampling and analytical methods used, and therefore the total count may not equal the sum of the individual counts in a column.



Report for:

Mr. Wesley Frey, Mr. Larry Sandhu, Mr. Ken Tse
Hygiene Technologies International, Inc.: Northern California
3625 Del Amo Boulevard, Suite 180
Torrance, CA 90503-8370

Regarding: Project: 21109001-5
EML ID: 853464

Approved by:

Lab Manager
Malcolm Moody

Dates of Analysis:
Spore trap analysis: 11-09-2011

Service SOPs: Spore trap analysis (1038)

For clarity, we report the number of significant digits as calculated; but, due to the nature of this type of biological data, the number of significant digits that is used for interpretation should generally be one or two. All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the items tested.

EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Document Number: 200091 - Revision Number: 5

Client: Hygiene Technologies International, Inc.:
Northern California
C/O: Mr. Wesley Frey, Mr. Larry Sandhu, Mr. Ken Tse
Re: 21109001-5

Date of Sampling: 11-08-2011
Date of Receipt: 11-08-2011
Date of Report: 11-09-2011

SPORE TRAP REPORT: NON-VIABLE METHODOLOGY

| Location: | 21109001-5-TM21OUT | | 21109001-5-TM22 | | 21109001-5-TM23 | |
|---------------------------------|--------------------|--------------|-----------------|-----------|-----------------|-----------|
| Comments (see below) | None | | None | | None | |
| Lab ID-Version‡: | 3787055-1 | | 3787056-1 | | 3787057-1 | |
| | raw ct. | spores/m3 | raw ct. | spores/m3 | raw ct. | spores/m3 |
| Alternaria | 2 | 27 | | | | |
| Ascospores* | 4 | 210 | | | | |
| Aureobasidium | | | | | | |
| Basidiospores* | 17 | 910 | | | | |
| Bipolaris/Drechslera group | 1 | 13 | | | | |
| Botrytis | | | | | | |
| Chaetomium | | | | | | |
| Cladosporium | 30 | 1,600 | | | | |
| Curvularia | | | | | | |
| Epicoccum | | | | | | |
| Myrothecium | | | | | | |
| Nigrospora | 10 | 130 | | | | |
| Other colorless | | | | | | |
| Penicillium/Aspergillus types† | | | | | | |
| Pithomyces | 1 | 13 | | | | |
| Rusts* | | | | | | |
| Smuts*, Periconia, Myxomycetes* | 7 | 93 | 4 | 53 | 1 | 13 |
| Stachybotrys | | | | | | |
| Stemphylium | | | | | | |
| Torula | | | | | | |
| Zygomycetes | | | | | | |
| Background debris (1-4+)†† | 3+ | | 2+ | | < 1+ | |
| Hyphal fragments/m3 | 120 | | < 13 | | < 13 | |
| Pollen/m3 | 170 | | < 13 | | 13 | |
| Skin cells (1-4+) | 1+ | | 2+ | | < 1+ | |
| Sample volume (liters) | 75 | | 75 | | 75 | |
| § TOTAL SPORES/m3 | | 3,000 | | 53 | | 13 |

Comments:

Spore types listed without a count or data entry were not detected during the course of the analysis for the respective sample.
 * Most of these spore types are not seen with culturable methods (Andersen sampling), although some may appear as non-sporulating fungi. Most of the basidiospores are "mushroom" spores while the rusts and smuts are plant pathogens.
 † The spores of *Aspergillus* and *Penicillium* (and others such as *Acremonium*, *Paecilomyces*) are small and round with very few distinguishing characteristics. They cannot be differentiated by non-viable sampling methods. Also, some species with very small spores are easily missed, and may be undercounted.
 †† Background debris indicates the amount of non-biological particulate matter present on the trace (dust in the air) and the resulting visibility for the analyst. It is rated from 1+ (low) to 4+ (high). Counts from areas with 4+ background debris should be regarded as minimal counts and may be higher than reported. It is important to account for samples volumes when evaluating dust levels.
 The Limit of Detection is the product of a raw count of 1 and 100 divided by the percent read. The analytical sensitivity (counts/m3) is the product of the Limit of Detection and 1000 divided by the sample volume.
 For more information regarding analytical sensitivity, please contact QA by calling the laboratory.
 ‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".
 § Total Spores/m3 has been rounded to two significant figures to reflect analytical precision.

Client: Hygiene Technologies International, Inc.:
Northern California
C/O: Mr. Wesley Frey, Mr. Larry Sandhu, Mr. Ken Tse
Re: 21109001-5

Date of Sampling: 11-08-2011
Date of Receipt: 11-08-2011
Date of Report: 11-09-2011

SPORE TRAP REPORT: NON-VIABLE METHODOLOGY

| Location: | 21109001-5-TM24 | | 21109001-5-TM25 | | 21109001-5-TM26OUT | |
|---------------------------------|-----------------|----------------|-----------------|----------------|--------------------|--------------|
| Comments (see below) | None | | None | | None | |
| Lab ID-Version‡: | 3787058-1 | | 3787059-1 | | 3787060-1 | |
| | raw ct. | spores/m3 | raw ct. | spores/m3 | raw ct. | spores/m3 |
| Alternaria | | | | | 3 | 40 |
| Ascospores* | | | | | 8 | 430 |
| Aureobasidium | | | | | | |
| Basidiospores* | | | | | 20 | 1,100 |
| Bipolaris/Drechslera group | | | | | 1 | 13 |
| Botrytis | | | | | | |
| Chaetomium | | | | | | |
| Cladosporium | | | | | 20 | 1,100 |
| Curvularia | | | | | | |
| Epicoccum | | | | | | |
| Myrothecium | | | | | | |
| Nigrospora | | | | | 10 | 130 |
| Other colorless | | | | | | |
| Penicillium/Aspergillus types† | | | | | 7 | 370 |
| Pithomyces | | | | | | |
| Rusts* | | | | | | |
| Smuts*, Periconia, Myxomycetes* | | | | | 10 | 130 |
| Stachybotrys | | | | | | |
| Stemphylium | | | | | | |
| Torula | | | | | | |
| Zygomycetes | | | | | | |
| Background debris (1-4+)†† | 1+ | | < 1+ | | 3+ | |
| Hyphal fragments/m3 | < 13 | | < 13 | | 53 | |
| Pollen/m3 | < 13 | | < 13 | | 150 | |
| Skin cells (1-4+) | 1+ | | < 1+ | | < 1+ | |
| Sample volume (liters) | 75 | | 75 | | 75 | |
| § TOTAL SPORES/m3 | | < 13 | | < 13 | | 3,300 |

Comments:

Spore types listed without a count or data entry were not detected during the course of the analysis for the respective sample.
 * Most of these spore types are not seen with culturable methods (Andersen sampling), although some may appear as non-sporulating fungi. Most of the basidiospores are "mushroom" spores while the rusts and smuts are plant pathogens.
 † The spores of *Aspergillus* and *Penicillium* (and others such as *Acremonium*, *Paecilomyces*) are small and round with very few distinguishing characteristics. They cannot be differentiated by non-viable sampling methods. Also, some species with very small spores are easily missed, and may be undercounted.
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 For more information regarding analytical sensitivity, please contact QA by calling the laboratory.
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 § Total Spores/m3 has been rounded to two significant figures to reflect analytical precision.

