



HYGIENETECH

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August 27, 2009

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

Document No. 20908001.2

Attention: David Gau

Regarding: Limited Indoor Air Quality Survey
4TH Floor Pre-Occupancy Assessment

Dear Mr. Gau:

On August 12 and 13, 2009, industrial hygienists with Hygiene Technologies International, Inc. (HygieneTech) conducted a limited indoor air quality survey on the 4th Floor of the State of California State Board of Equalization (BOE) building located at the above mentioned address. This survey was performed in response to BOE's need to reoccupy the 4th Floor subsequent to fungal growth remediation and other renovation work performed under the direction of the State of California Department of General Services (DGS) on that floor. At the time of the survey, various samples were collected and direct-reading instruments were used to assess the general indoor air quality. I have enclosed our report, which included general observations, sample and direct-reading results, a discussion of the data, conclusions, and recommendations.

If you have any comments or questions regarding the information contained in this report, please do not hesitate to contact our offices directly at (310) 370-8370.

Sincerely,

HYGIENE TECHNOLOGIES INTERNATIONAL, INC.

Brian P. Daly, CIH, PE
President



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**LIMITED INDOOR AIR QUALITY SURVEY
PRE-OCCUPANCY ASSESSMENT – 4TH FLOOR**

**450 N STREET
SACRAMENTO, CALIFORNIA**

PREPARED FOR:

**STATE OF CALIFORNIA
BOARD OF EQUALIZATION
450 N STREET
SACRAMENTO, CALIFORNIA**

PREPARED BY:

**HYGIENE TECHNOLOGIES INTERNATIONAL, INC.
3625 DEL AMO BOULEVARD, SUITE 180
TORRANCE, CALIFORNIA**

AUGUST 27, 2009



1.0 BACKGROUND

On August 12 and 13, 2009, industrial hygienists with Hygiene Technologies International, Inc. (HygieneTech) conducted a limited indoor air quality survey on the 4th Floor of the State of California State Board of Equalization (BOE) building located at 450 N Street in Sacramento, California. This survey was performed in response to BOE's need to reoccupy the 4th Floor subsequent to fungal growth remediation and other renovation work performed under the direction of the State of California Department of General Services (DGS) on that floor. During the survey, a variety of samples were collected and direct-reading instruments were used to assess the general indoor air quality on the 4th Floor of the subject building. Various air samples were collected in order to assess fungal growth exposure potentials. In addition, air samples were collected throughout the floor for fibrous dust, 4-phenylcyclohexene, formaldehyde, and total dust analysis. Direct-reading instruments were also used to determine airborne volatile organic compounds (VOCs), carbon dioxide (CO₂), air temperature, and relative humidity.

2.0 OBSERVATIONS

The interior building materials of the 4th Floor included, but were not limited to, metal window frames; painted gypsum board and/or metal windowsills; metal doorjambs and door frames; painted gypsum board walls in the general work areas; tile covered walls and painted gypsum board ceilings in the restrooms; suspended 2' by 4' ceiling tiles and or gypsum board ceilings in the general work areas; and ceramic or vinyl tile flooring in the restrooms and break rooms.

The floor was unoccupied on the survey dates but was furnished with typical office desks, upholstered chairs, shelves, fabric covered cubicles, and other general office items. Note that new carpet had been installed and fresh paint had been applied throughout the floor in the weeks preceding the survey dates.

3.0 SAMPLING AND ANALYSIS

Air samples were collected and 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. Other samples were collected for airborne fibers, 4-phenylcyclohexene, formaldehyde, and total dust determinations using SKC[®] brand Airchek[®] 52 sampling pumps and the appropriate sampling media. Pump flow rates were established and verified using a BIOS DryCal DC-Lite primary flow meter. Those samples were collected and analyzed along with blanks (identical sampling media through which no air was drawn) at laboratories accredited by the American Industrial Hygiene Association (AIHA) through successful participation in the National Institute for Occupational Safety and Health (NIOSH) Proficiency Analytical Testing Program. Direct-reading instruments were used to determine airborne VOC levels, the results of which appear in Table 20908001-6 in Appendix A of this report. A discussion of the airborne CO₂ data, along with air temperature and relative humidity results, appears in Section 4.0 of this report. Additional information concerning the specific sampling and analytical methods appears below.



3.0 SAMPLING AND ANALYSIS (CONTINUED)

3.1 Airborne Total Fungi

1. Air samples for airborne total (viable and nonviable) fungi determinations were collected using a Zefon brand Bio-Pump™ equipped with Air-O-Cell™ cassettes. All such samples were collected at various indoor locations and two samples were collected outdoors on for comparison purposes. The resultant data, which are presented in spores per cubic meter of air (spores/M³), appear in Table 20908001-1.

3.2 Airborne Fibrous Dust

Area air samples for fibrous dust were collected at stationary locations on 25-millimeter diameter, 0.8-micrometer pore size, mixed cellulose ester filters. The samples were analyzed by phase contrast microscopy (PCM) in accordance with the NIOSH Method 7400. These data are presented in fibers per cubic centimeter (f/cc) of air in Table 20908001-2.

3.3 Airborne Total Dust

Area air samples for total dust determination were collected at stationary locations on filter cassettes containing pre-weighed 37-millimeter diameter, polyvinyl chloride filters having a pore size of five micrometers. The samples were analyzed by gravimetric method in accordance with the NIOSH Method 0500. These data are presented in milligrams per cubic meter of air (mg/M³) and appear in Table 20908001-3.

3.4 Formaldehyde

Area air samples were collected for formaldehyde determinations using DNPH silica gel sorbent tubes. The analyses were performed by high performance liquid chromatography using an ultraviolet detector in accordance with a modified NIOSH Method 2016. These data are presented in parts per million (ppm) and appear in Table 20908001-4.

3.5 Airborne 4-Phenylcyclohexene

Area air samples for 4-phenylcyclohexene were collected by the mini-canisters that were equipped with 8 hour regulators, and each sample was analyzed by gas chromatography with mass spectrometry detection (GC-MS) in accordance with the modified OSHA PV2120/U.S. EPA Method TO15. These data are presented in parts per billion volume (ppbv) and appear in Table 20908001-5.

3.6 Airborne Volatile Organic Compounds

Direct-reading air measurements for VOCs were also recorded at various locations on the 4th Floor using a RAE Systems, Inc. Mini-RAE 2000 photoionization detector, which is capable of detecting a wide variety of unsaturated hydrocarbons at airborne concentrations ranging from 0.1 to 10,000 parts per million (ppm). Prior to the survey, this instrument was calibrated using a 100-ppm isobutylene gas standard. These data are presented in ppm.



3.0 SAMPLING AND ANALYSIS (CONTINUED)

3.7 Airborne Carbon Dioxide

Direct-reading air measurements for airborne CO₂ concentration was recorded at a stationary location using a Telaire® 7001 Carbon Dioxide and Temperature Monitor along with the HOBO® data logger. The data are presented in ppm.

3.8 Air Temperature and Relative Humidity

Air temperature and relative humidity data were recorded at a stationary location using a Telaire® 7001 Carbon Dioxide and Temperature Monitor along with the HOBO® data logger.

4.0 DISCUSSION

4.1 Airborne Total Fungi

The airborne total fungi data showed mostly common spore types outdoors such as *Alternaria*, ascospores, basidiospores, *Chaetomium*, *Cladosporium*, colorless spores typical of *Penicillium* and *Aspergillus* species, *Epicoccum*, *Nigrospora*, other brown, rusts, smuts, and/or *Torula*, with *Cladosporium* predominating. Indoors, the ambient data showed low airborne concentrations of common fungal spores that included one or more of the following: ascospores, *Cladosporium*, colorless spores typical of *Penicillium* and *Aspergillus* species, and/or rusts. Indoors, the distribution of fungal spore types 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 not believed to pose a health risk beyond that posed by the outdoor environment where exposures to airborne fungi are expected.

4.2 Airborne Fibrous Dust

The data recorded in the surveyed areas indicated that airborne fibrous dusts were not detected at or above the respective laboratory analytical detection limits indicated. Because the samples were collected at stationary locations at approximate breathing zone height, the resultant data are expected to represent building occupant *exposure potentials* for those persons working in or passing through the areas monitored. These data, which are expected to represent employee *exposure potentials* to fibers of various types, including man-made and natural mineral fibers, cellulose (paper or wood composition), gypsum, and other fibrous dusts common in the environment, are well below the current Cal-OSHA 8-hour TWA PEL for asbestos fibers of 0.1 f/cc, the most restrictive exposure limit for fibrous dusts.

4.3 Airborne Total Dust

Common dust that is typically identified in buildings usually contains a wide variety of materials including, but not limited to, gypsum crystals, cellulosic particles, fiberglass fragments, mineral grains from soil, fungi spores, fine glass fibers, textile and wood fibers, iron or steel fragments, dead skin cells, insect parts, animal dander, and pollens. Generally, exposure to low levels of such materials does not produce ill effects in most persons. In fact, these so-called *nuisance dusts* have a long



4.0 DISCUSSION (CONTINUED)

4.3 Airborne Total Dust (Continued)

history of little adverse effect to the lungs and are not known to produce significant diseases or toxic effects, such as collagen (scar tissue) formation, when exposure are kept under reasonable control.

The data recorded in the surveyed areas showed that airborne total dust was not detected at or above the respective laboratory analytical detection limits indicated. Because the samples were collected at stationary locations at approximate breathing zone height, the resultant data are expected to represent building occupant *exposure potentials* for those persons working in or passing through the areas monitored. These data are well below the State of California, Department of Industrial Relations, Division of Occupational Safety and Health (Cal-OSHA) 8-hour time-weighted average (TWA) permissible exposure limit (PEL) for total dust of 10 mg/M³, as defined in Title 8 of the California Code of Regulations, Section 5155 (T8, CCR § 5155). Note that these data are also well below the American Conference of Governmental Industrial Hygienists 8-hour TWA threshold limit value (TLV-TWA) for particulate (not otherwise classified) of 10 mg/M³; the U.S. Environmental Protection Agency (EPA) National Ambient Air Quality Primary Standard of 0.26 mg/M³ (24-hour standard); and the American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc. (ASHRAE) theoretical value for non-occupational environments of 1/10 of the TLV.

4.4 Formaldehyde

The data recorded in the surveyed areas indicated that airborne formaldehyde was detected at levels of 0.01 ppm in all four samples collected. Because these samples were collected at stationary locations at approximate breathing zone height, the resultant data are expected to represent building occupant *exposure potentials* for those persons working in or passing through the areas monitored. These data are well below the State of California, Department of Industrial Relations, Division of Occupational Safety and Health (Cal-OSHA) 8-hour time-weighted average (TWA) permissible exposure limit (PEL) for Formaldehyde of 0.75 ppm, as defined in Title 8 of the California Code of Regulations, Section 5155 (T8, CCR § 5155).

4.5 Airborne 4-Phenylcyclohexene

The airborne data indicated that 4-phenylcyclohexene was not detected at or above the laboratory analytical detection limit of 1.0 ppbv. Although current standards or guidelines have not been established for 4-phenylcyclohexene at the time of this report, all such data are considered unremarkable.

4.6 Airborne Volatile Organic Compounds

With the use of a direct-reading photoionization detector, VOCs in most locations were not detected at or above the instrument detection limit of 0.1 ppm. Because these data were recorded at stationary locations at approximate breathing zone height, the results are expected to represent building occupant *exposure potentials* for those persons occupying or passing through the areas monitored. These data were well below the surrogate Cal-OSHA PELs that are often used for comparative purposes regarding VOC exposures, such as those for gasoline, hexane, and varnish makers and painters (VM&P) naphtha.



4.0 DISCUSSION (CONTINUED)

4.7 Airborne Carbon Dioxide

On August 13, 2009, the direct-reading results indicated that CO₂ was detected at levels ranging from 464 to 571 ppm on the 4th Floor. While these data were somewhat higher than the expected outdoor CO₂ levels, which generally range between 320 and 350 ppm, they are considered normal for indoor environments and they are all well below the Cal-OSHA 8-hour TWA PEL for CO₂ of 5000 ppm (T8, CCR, § 5155). They are also below the level of 1000 ppm, which is essentially equivalent to the recommended upper limit for building occupant comfort and odor control established by ASHRAE (not greater than 700 ppm above the outdoor CO₂ value) as stated in ASHRAE 62-2001.

Based on historic studies performed by HygieneTech, building occupant complaints of "stuffy" air often begin when CO₂ levels exceed 800 ppm. HygieneTech has also found that some sensitive persons may experience discomfort, including eye irritation and headache, when CO₂ levels reach 1,000 ppm. Such symptoms are not believed to be the result of an unhealthy exposure to CO₂; rather, they are thought to be the result of exposure to other common indoor air pollutants which, if not exhausted and/or diluted, can accumulate over time.

4.8 Air Temperature and Relative Humidity

On August 13, 2009, the air temperatures ranged between 71.8 and 78.7 degrees Fahrenheit (°F). Based on the experience of HygieneTech, the air temperatures perceived as comfortable by most persons in office environments, and recommended by ASHRAE for occupant comfort, range between 68.0 and 74.5°F (winter) and 73.0 and 79.0°F (summer). The air temperatures recorded in the surveyed areas were generally within the comfort range recommended for the summer months.

Relative humidity data were recorded indoors at levels ranging from 37.1 to 43.7 percent. Such levels were well within the 20 to 60 percent relative humidity level range recommended by ASHRAE for occupant comfort. Note that HygieneTech recommends that the relative humidity in buildings not exceed 50 percent in order to limit the potential for fungal growth.

5.0 CONCLUSIONS

5.1 The airborne total fungi data recorded in the surveyed areas showed airborne fungi levels that were below those recorded outdoors and therefore considered unremarkable. These data are not believed to pose a health risk beyond that posed by the outdoor environment where exposures to airborne fungi are expected.

5.2 The airborne total and fibrous dust, 4-phenylcyclohexene, formaldehyde, VOC, and CO₂ recorded during the survey were unremarkable. Collectively, the data were well below applicable Cal-OSHA 8-hour TWA PELs and/or other occupational, non-occupational, ASHRAE, or foreign guidelines. The data are not expected to represent conditions that pose a measurable health risk to the building occupants.



5.0 CONCLUSIONS (CONTINUED)

- 5.3 On August 13, 2009, air temperatures ranged between 71.8 and 78.7 degrees Fahrenheit (°F). Based on the experience of HygieneTech, the air temperatures perceived as comfortable by most persons in office environments, and recommended by ASHRAE for occupant comfort, range between 68.0 and 74.5°F (winter) and 73.0 and 79.0°F (summer). The air temperatures recorded in the surveyed areas were generally within the comfort range recommended for the summer months. Relative humidity data were recorded indoors at levels ranging from 37.1 to 43.7 percent, levels that were well within the 20 to 60 percent relative humidity level range recommended by ASHRAE for occupant comfort. Note that HygieneTech recommends that the relative humidity in buildings not exceed 50 percent in order to limit the potential for fungal growth.
- 5.4 Be advised that the data provided in this report only represent fungal growth exposure potentials that existed at the time the survey was performed and at the precise sample locations only, 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 growth may exist at one or more locations in the structure that were not specifically assessed during the survey.

6.0 RECOMMENDATIONS

All such recommendations are based strictly on the assessment information and analytical data that were available to HygieneTech at the time this report was prepared. Be advised that, in order to establish data that accurately reflects all the fungal growth sites on the 4th Floor, additional assessment evaluations may be required as more information is known regarding the history of water intrusion episodes in discrete building areas.

- 6.1 Additional fungal growth remediation is potentially required within the core of the 4th Floor due to known fungal growth reservoirs confirmed in similar areas on other floors during destructive testing, as stated by LaCroix Davis, LLC in their *California State Board of Equalization Building Assessment – Final Report* dated February 29, 2009. The purpose of this assessment was to allow the BOE to safely reoccupy the 4th Floor. Until such time that these confirmed fungal growth and perhaps other unknown reservoirs are remediated within the structure, it is highly likely that complaints related to fungal growth related odors, which has been a common concern on several floor, will continue to be an issue. The HygieneTech investigation into the odor complaints, conclusions, and recommendations can be found in HygieneTech Document No. 2090301.1 dated May 4, 2009.
- 6.2 If not yet established, an accurate record of all air monitoring results should be maintained in accordance with Cal-OSHA regulation found in T8, CCR § 3204. All affected employees should be informed that the *exposure potential* data in this report exist and that those persons, or their representatives, have a right to access relevant exposure data and medical records.
- 6.2 Also be advised that the exposure data recorded during the survey may not be sufficiently broad to adequately assess the suitability of the indoor air quality for all individuals, particularly those who are extremely sensitive to certain chemical and/or biological substances or for those



6.0 RECOMMENDATIONS

individuals with immune system deficiencies. Although not expected, if persons occupying or passing through the 4th Floor do experience non-specific ill effects of unknown etiology, then those affected should be referred to a medical professional in order to determine or specify the possible cause(s) of such reactions. If more information becomes available, further investigation and air monitoring may be warranted.

HYGIENE TECHNOLOGIES INTERNATIONAL, INC.



Kenny K. Hsi, CIH
Technical Director

Date: August 27, 2009



Brian P. Daly, CIH, PE
President

Date: August 27, 2009

HYGIENE TECHNOLOGIES INTERNATIONAL, INC.

APPENDIX A



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

**TABLE 20908001-1
AIRBORNE TOTAL FUNGI RESULTS
4TH FLOOR
SACRAMENTO, CALIFORNIA
AUGUST 12, 2009**

Page 1

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

SAMPLE NUMBER	20908001-TM101OUTLS	20908001-TM102LS	20908001-TM103LS	20908001-TM104LS
SAMPLING LOCATION/ACTIVITIES	Outdoors; about 20 feet east of building; approximately five feet above ground/Normal outdoor activities	Area between Columns N18 and K18; Cubicle 071; about center; approximately five feet above floor/Sampling activities only	Area between Columns M18 and K18; Quiet Room 416; about center; approximately five feet above floor/Sampling activities only	Column N18 area; Cubicle 38; about center; approximately five feet above floor/Sampling activities only
START/STOP	13:31:00/13:36:00	13:47:00/13:52:00	13:53:00/13:58:00	14:01:00/14:06:00
SAMPLE TIME	5 minutes	5 minutes	5 minutes	5 minutes
Alternaria	27			
Ascospores	160			
Basidiospores	270			
Bipolaris/Drechslera group				
Botrytis				
Chaetomium	27			
Cladosporium	4,700	53		53
Curvularia				
Epicoccum	13			
Fusarium				
Myrothecium				
Nigrospora	27			
Other brown	13			
Penicillium/Aspergillus types	320	53		
Pithomyces				
Rusts		40		
Smuts, Periconia, Myxomycetes	270			
Stachybotrys				
Stemphylium				
Torula				
Trichocladium				
Ulocladium				
Zygomycetes				
Hyphal fragments	170	13	<13	13
Background debris*	3+	2+	1+	2+
TOTAL **	5,800	150	<13	53

*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.



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Sacramento, California 94279

**TABLE 20908001-1
AIRBORNE TOTAL FUNGI RESULTS
4TH FLOOR
SACRAMENTO, CALIFORNIA
AUGUST 12, 2009**

Page 2

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

	20908001-TM105LS	20908001-TM106LS	20908001-TM107LS	20908001-TM108LS
SAMPLING LOCATION/ACTIVITIES	Column N20 area; Cubicle 22; about center; approximately five feet above floor/Sampling activities only	Column N22 area; Cubicle 144; about center; approximately five feet above floor/Sampling activities only	Column L22 area; Cubicle 139; about center; approximately five feet above floor/Sampling activities only	Area between Columns K20 and K21; Cubicle 111; about center; approximately five feet above floor/Sampling activities only
START/STOP	14:07:00/14:12:00	14:24:00/14:29:00	14:32:00/14:37:00	14:39:00/14:44:00
SAMPLE TIME	5 minutes	5 minutes	5 minutes	5 minutes
Alternaria				
Ascospores	53			
Basidiospores				
Bipolaris/Drechslera group				
Botrytis				
Chaetomium				
Cladosporium		53		
Curvularia				
Epicoccum				
Fusarium				
Nigrospora				
Oidium				
Other brown				
Penicillium/Aspergillus types		110		
Pithomyces				
Rusts		13		
Smuts, Periconia, Myxomycetes				
Stachybotrys				
Stemphylium				
Torula				
Trichocladium				
Ulocladium				
Zygomycetes				
Hyphal fragments	<13	<13	<13	<13
Background debris*	1+	1+	1+	1+
TOTAL**	53	170	<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.

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TABLE 20908001-1
AIRBORNE TOTAL FUNGI RESULTS
4TH FLOOR
SACRAMENTO, CALIFORNIA
AUGUST 12, 2009

Page 3

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

SAMPLE NUMBER	20908001-TM109LS	20908001-TM110OUTLS		
SAMPLING LOCATION/ACTIVITIES	Column K18 area; Cubicle 103; about center; approximately five feet above floor/Sampling activities only	Outdoors; about 15 feet north of building; approximately five feet above floor/Normal outdoor activities	This column intentionally left blank	This column intentionally left blank
START/STOP	14:45:00/14:50:00	14:55:00/14:50:00		
SAMPLE TIME	5 minutes	5 minutes		
Alternaria		13		
Ascospores		160		
Basidiospores		1,000		
Bipolaris/Drechslera group				
Botrytis				
Chaetomium		27		
Cladosporium	53	4,500		
Curvularia				
Epicoccum				
Fusarium				
Myrothecium				
Nigrospora		200		
Oidium				
Other brown				
Penicillium/Aspergillus types		1,400		
Pithomyces				
Rusts	13	53		
Smuts, Periconia, Myxomycetes		110		
Stachybotrys				
Stemphylium				
Torula		27		
Trichocladium				
Ulocladium				
Zygomycetes				
Hyphal fragments	<13	53		
Background debris*	1+	3+		
TOTAL**	67	7,500		

*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.

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Sacramento, California 94279

TABLE 20908001-2
4TH FLOOR
AIRBORNE FIBERS RESULTS
SACRAMENTO, CALIFORNIA
AUGUST 12, 2009

NAME/ REFERENCE	LOCATION/ ACTIVITIES	PPE USED	SAMPLE NUMBER	START/ STOP	SAMPLE TIME	CONTAMINANT	RESULTS (f/cc)	PEL (f/cc)
Area Sample	Area between Columns M18 and K18; Cubicle 72; approximately five feet above floor/Sampling activities only	N/A	20908001- F01	09:15/ 13:38	263 minutes	Fibers	< 0.002	0.1
Area Sample	Column N20 area; about center; approximately five feet above floor/Sampling activities only	N/A	20908001- F02	09:21/ 13:47	266 minutes	Fibers	<0.002	0.1
Area Sample	Column L22 area; Cubicle 139.01; approximately five feet above floor/Sampling activities only	N/A	20908001- F03	13:50/ 17:50	240 minutes	Fibers	<0.003	0.1
Area Sample	Column K20 area; about center; approximately five feet above floor/Sampling activities only	N/A	20908001- F04	13:44/ 17:44	240 minutes	Fibers	<0.003	0.1
Blank	N/A	N/A	20906001- F05BLANK	N/A	N/A	Fibers	All data blank corrected	N/A

LEGEND

PPE: Personal protective equipment
N/A: Not applicable
PEL: Cal-OSHA 8-hour time-weighted average permissible exposure limit

<: Less than
f/cc: Fibers per cubic centimeter of air

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Sacramento, California 94279

TABLE 20908001-3
4TH FLOOR
AIRBORNE TOTAL DUST RESULTS
SACRAMENTO, CALIFORNIA
AUGUST 12, 2009

NAME/ REFERENCE	LOCATION/ ACTIVITIES	PPE USED	SAMPLE NUMBER	START/ STOP	SAMPLE TIME	CONTAMINANT	RESULTS (mg/M ³)	PEL (mg/M ³)
Area Sample	Area between Columns M18 and K18; Cubicle 72; approximately five feet above floor/Sampling activities only	N/A	20908001- TD01	09:15/ 13:39	264 minutes	Total Dust	<0.19	10
Area Sample	Column N20 area; about center; approximately five feet above floor/Sampling activities only	N/A	20908001- TD02	09:21/ 13:24	243 minutes	Total Dust	<0.21	10
Area Sample	Column L22 area; Cubicle 139.01; approximately five feet above floor/Sampling activities only	N/A	20908001- TD03	09:25/ 13:37	252 minutes	Total Dust	<0.20	10
Area Sample	Column K20 area; about center; approximately five feet above floor/Sampling activities only	N/A	20908001- TD04	13:44/ 17:44	240 minutes	Total Dust	<0.21	10
Blank	N/A	N/A	20908001- TD05BLANK	N/A	N/A	Total Dust	All data blank corrected	N/A

LEGEND

PPE: Personal protective equipment
N/A: Not applicable
mg/M³: Milligrams per cubic meter

<: Less than
PEL: Cal-OSHA 8-hour time-weighted average permissible exposure limit

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TABLE 20908001-4
4TH FLOOR
AIRBORNE FORMALDEHYDE RESULTS
SACRAMENTO, CALIFORNIA
AUGUST 13, 2009

NAME/ REFERENCE	LOCATION/ ACTIVITIES	PPE USED	SAMPLE NUMBER	START/ STOP	SAMPLE TIME	CONTAMINANT	RESULTS (ppm)	PEL (ppm)
Area Sample	Column K20 area; about center; approximately five feet above floor/Sampling activities only	N/A	20908001-C01	13:07/ 14:22	75 minutes	Formaldehyde	0.01	0.75
Area Sample	Area between Columns M18 and K18; Cubicle 72; about center; approximately five feet above floor/Sampling activities only	N/A	20908001-C02	13:09/ 14:24	75 minutes	Formaldehyde	0.01	0.75
Area Sample	Column N20 area; about center; approximately five feet above floor/Sampling activities only	N/A	20908001-C03	13:11/ 14:26	75 minutes	Formaldehyde	0.01	0.75
Area Sample	Column L22 area; Cubicle 139.01; approximately five feet above floor/Sampling activities only	N/A	20908001-C04	14:25/ 15:40	75 minutes	Formaldehyde	0.01	0.75
Blank	N/A	N/A	20908001-C05Blank	N/A	N/A	Formaldehyde	All data blank corrected	N/A

LEGEND

PPE: Personal protective equipment
N/A: Not applicable
ppm: Parts per million

<: Less than
PEL: Cal-OSHA 8-hour time-weighted average permissible exposure limit

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TABLE 20908001-5
4TH FLOOR
AIRBORNE 4-PHENYLCYCLOHEXENE
SACRAMENTO, CALIFORNIA
AUGUST 13, 2009

NAME/ REFERENCE	LOCATION/ ACTIVITIES	PPE USED	SAMPLE NUMBER	START/ STOP	SAMPLE TIME	CONTAMINANT	RESULTS (ppbv)	PEL (ppm)
Area Sample	Column K18 area; Cubicle 103; about center; approximately five feet above floor/Sampling activities only	N/A	20908001-M01	7:52/ 15:52	480 minutes	4-Phenylcyclohexene	<1.0	N/A
Area Sample	Column N22 area; Cubicle 43; about center; approximately five feet above floor/Sampling activities only	N/A	20908001-M02	7:56/ 15:56	480 minutes	4-Phenylcyclohexene	<1.0	N/A

LEGEND

PPE: Personal protective equipment
N/A: Not applicable
PPBV: Parts per billion volume

<: Less than
PEL: Cal-OSHA 8-hour time-weighted average permissible exposure limit

HYGIENE TECHNOLOGIES INTERNATIONAL, INC.

APPENDIX A



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

TABLE 20908001-6
DIRECT-READING RESULTS
4TH FLOOR
SACRAMENTO, CALIFORNIA
AUGUST 13, 2009

DATE	LOCATION/SITE ACTIVITIES	SAMPLE TIME	CONTAMINANT	RESULTS (ppm)	COMMENTS
08-13-09	4 th floor; northern quadrant; approximately five feet above floor/Sampling activities only	10:50/10:55	Volatile Organic Compounds	ND < 0.1	N/A
08-13-09	4 th floor; eastern quadrant; approximately five feet above floor/Sampling activities only	10:58/11:03	Volatile Organic Compounds	ND < 0.1	N/A
08-13-09	4 th floor; southern quadrant; approximately five feet above floor/Sampling activities only	11:05/11:10	Volatile Organic Compounds	ND < 0.1	N/A
08-13-09	4 th floor; western quadrant; approximately five feet above floor/Sampling activities only	11:15/11:20	Volatile Organic Compounds	ND < 0.1	N/A

LEGEND

ND: Not detected
<: Less than

N/A: Not applicable
ppm: Parts per million



EMLab P&K

Report for:

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

Regarding: Project: 20809001
 EML ID: 570277

Approved by:

Lab Manager
Malcolm Moody

Dates of Analysis:
Spore trap analysis: 08-14-2009

Project SOPs: Spore trap analysis (I100000)

This coversheet is included with your report in order to comply with AIHA and ISO accreditation requirements.

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 corrections of results is not a standard practice. 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
 Re: 20809001

Date of Sampling: 08-12-2009
 Date of Receipt: 08-13-2009
 Date of Report: 08-14-2009

SPORE TRAP REPORT: NON-VIABLE METHODOLOGY

Location:	20809001-TM101OUTLS		20809001-TM102LS		20809001-TM103LS		20809001-TM104LS	
Comments (see below)	None		None		A		None	
Lab ID-Version‡:	2529006-1		2529007-1		2529008-1		2529009-1	
	raw ct.	spores/m3	raw ct.	spores/m3	raw ct.	spores/m3	raw ct.	spores/m3
Alternaria	2	27						
Arthrinium								
Ascospores*	3	160						
Aureobasidium								
Basidiospores*	5	270						
Bipolaris/Drechslera group								
Botrytis								
Chaetomium	2	27						
Cladosporium	88	4,700	1	53			1	53
Curvularia								
Epicoccum	1	13						
Fusarium								
Myrothecium								
Nigrospora	2	27						
Other brown	1	13						
Other colorless								
Penicillium/Aspergillus types†	6	320	1	53				
Pithomyces								
Rusts*			3	40				
Smuts*, Periconia, Myxomycetes*	20	270						
Stachybotrys								
Stemphylium								
Torula								
Ulocladium								
Zygomycetes								
Background debris (1-4+)††	3+		2+		1+		2+	
Hyphal fragments/m3	170		13		< 13		13	
Pollen/m3	80		< 13		< 13		< 13	
Skin cells (1-4+)	< 1+		1+		1+		1+	
Sample volume (liters)	75		75		75		75	
§ TOTAL SPORE/m3		5,800		150		< 13		53

Comments: A) No spores detected.

* 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.

‡ A "Version" greater than 1 indicates amended data.

§ Total Spores/m3 has been rounded to two significant figures to reflect analytical precision.
 TestAmerica Environmental Microbiology Laboratory, Inc.

Client: Hygiene Technologies International, Inc.:
Northern California
C/O: Mr. Wesley Frey
Re: 20809001

Date of Sampling: 08-12-2009
Date of Receipt: 08-13-2009
Date of Report: 08-14-2009

SPORE TRAP REPORT: NON-VIABLE METHODOLOGY

Location:	20809001-TM105LS		20809001-TM106LS		20809001-TM107LS		20809001-TM108LS	
Comments (see below)	None		None		A		A	
Lab ID-Version‡:	2529010-1		2529011-1		2529012-1		2529013-1	
	raw ct.	spores/m3	raw ct.	spores/m3	raw ct.	spores/m3	raw ct.	spores/m3
Alternaria								
Arthrinium								
Ascospores*	1	53						
Aureobasidium								
Basidiospores*								
Bipolaris/Drechslera group								
Botrytis								
Chaetomium								
Cladosporium			1	53				
Curvularia								
Epicoccum								
Fusarium								
Myrothecium								
Nigrospora								
Other brown								
Other colorless								
Penicillium/Aspergillus types†			2	110				
Pithomyces								
Rusts*			1	13				
Smuts*, Periconia, Myxomycetes*								
Stachybotrys								
Stemphylium								
Torula								
Ulocladium								
Zygomycetes								
Background debris (1-4+)††	1+		1+		1+		1+	
Hyphal fragments/m3	< 13		< 13		< 13		< 13	
Pollen/m3	< 13		< 13		< 13		< 13	
Skin cells (1-4+)	1+		1+		1+		1+	
Sample volume (liters)	75		75		75		75	
§ TOTAL SPORE/m3		53		170		< 13		< 13

Comments: A) No spores detected.

* 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.

‡ A "Version" greater than 1 indicates amended data.

§ Total Spores/m3 has been rounded to two significant figures to reflect analytical precision.
TestAmerica Environmental Microbiology Laboratory, Inc.

Client: Hygiene Technologies International, Inc.:
 Northern California
 C/O: Mr. Wesley Frey
 Re: 20809001

Date of Sampling: 08-12-2009
 Date of Receipt: 08-13-2009
 Date of Report: 08-14-2009

SPORE TRAP REPORT: NON-VIABLE METHODOLOGY

Location:	20809001-TM109LS		20809001-TM110OUTLS	
Comments (see below)	None		B	
Lab ID-Version‡:	2529014-1		2529015-1	
	raw ct.	spores/m3	raw ct.	spores/m3
Alternaria			1	13
Arthrinium				
Ascospores*			3	160
Aureobasidium				
Basidiospores*			19	1,000
Bipolaris/Drechslera group				
Botrytis				
Chaetomium			2	27
Cladosporium	1	53	85	4,500
Curvularia				
Epicoccum				
Fusarium				
Myrothecium				
Nigrospora			15	200
Other brown				
Other colorless				
Penicillium/Aspergillus types†			88	1,400
Pithomyces				
Rusts*	1	13	4	53
Smuts*, Periconia, Myxomycetes*			8	110
Stachybotrys				
Stemphylium				
Torula			2	27
Ulocladium				
Zygomycetes				
Background debris (1-4+)††	1+		3+	
Hyphal fragments/m3	< 13		53	
Pollen/m3	< 13		13	
Skin cells (1-4+)	1+		< 1+	
Sample volume (liters)	75		75	
§ TOTAL SPORE/m3		67		7,500

Comments: B) 82 of the raw count *Penicillium/Aspergillus* type spores were present as a single clump.

* 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.

‡ A "Version" greater than 1 indicates amended data.

§ Total Spores/m3 has been rounded to two significant figures to reflect analytical precision.
 TestAmerica Environmental Microbiology Laboratory, Inc.

Client: Hygiene Technologies International, Inc.:
Northern California
C/O: Mr. Wesley Frey
Re: 20809001

Date of Sampling: 08-12-2009
Date of Receipt: 08-13-2009
Date of Report: 08-14-2009

MoldRANGE™: Extended Outdoor Comparison

Outdoor Location: 20809001-TM101OUTLS

Fungi Identified	Outdoor data	Typical Outdoor Data by Date†				Typical Outdoor Data by Location‡			
		Month: August				State: CA			
	spores/m3	low	med	high	freq %	low	med	high	freq %
Generally able to grow indoors*									
Alternaria	27	7	40	560	67	7	27	230	57
Bipolaris/Drechslera group	-	7	13	270	26	7	13	120	13
Chaetomium	27	7	13	130	14	7	13	120	19
Cladosporium	4,700	53	800	12,000	97	53	640	6,700	97
Curvularia	-	7	27	810	30	7	13	230	7
Epicoccum	13	7	20	280	31	7	13	160	20
Nigrospora	27	7	13	230	22	7	13	170	8
Other brown	13	7	13	110	32	7	13	88	36
Penicillium/Aspergillus types	320	27	270	3,400	85	33	210	2,500	85
Stachybotrys	-	7	13	380	3	7	13	270	5
Torula	-	7	13	160	16	7	13	150	12
Seldom found growing indoors**									
Ascospores	160	13	210	5,800	83	13	110	1,900	71
Basidiospores	270	13	430	22,000	96	13	210	7,000	93
Rusts	-	7	20	350	28	7	13	250	28
Smuts, Periconia, Myxomycetes	270	7	53	1,000	77	8	40	490	70
TOTAL SPORES/M3	5,827								

† The Typical Outdoor Data by Date represents the typical outdoor spore levels across North America for the month indicated. The last column represents the frequency of occurrence. The low, medium, and high values represent the 2.5, 50, and 97.5 percentile values of the spore type when it is detected. For example, if the frequency of occurrence is 63% and the low value is 53, it would mean that the given spore type is detected 63% of the time and, when detected, 2.5% of the time it is present in levels above the detection limit and below 53 spores/m3. These values are updated periodically, and if enough data is not available to make a statistically meaningful assessment, it is indicated with a dash.

‡ The Typical Outdoor Data by Location represents the typical outdoor spore levels for the region indicated for the entire year. As with the Typical Outdoor Data by Date, the four columns represent the frequency of occurrence and the typical low, medium, and high concentration values for the spore type indicated. These values are updated periodically, and if enough data is not available to make a statistically meaningful assessment, it is indicated with a dash.

*The spores in this category are generally capable of growing on wet building materials in addition to growing outdoors. Building related growth is dependent upon the fungal type, moisture level, type of material, and other factors. *Cladosporium* is one of the predominant spore types worldwide and is frequently present in high numbers. *Penicillium/Aspergillus* species colonize both outdoor and indoor wet surfaces rapidly and are very easily dispersed. Other genera are usually present in lesser numbers.

**These fungi are generally not found growing on wet building materials. For example, the rusts and smuts are obligate plant pathogens. However, in each group there are notable exceptions. For example, agents of wood decay are members of the basidiomycetes and high counts of a single morphological type of basidiospore on an inside sample should be considered significant.

Interpretation of the data contained in this report is left to the client or the persons who conducted the field work. This report is provided for informational and comparative purposes only and should not be relied upon for any other purpose. "Typical outdoor data" are based on the results of the analysis of samples delivered to and analyzed by EMLab P&K and assumptions regarding the origins of those samples. Sampling techniques, contaminants infecting samples, unrepresentative samples and other similar or dissimilar factors may affect these results. In addition, EMLab P&K may not have received and tested a representative number of samples for every region or time period. EMLab P&K hereby disclaims any liability for any and all direct, indirect, punitive, incidental, special or consequential damages arising out of the use or interpretation of the data contained in, or any actions taken or omitted in reliance upon, this report.

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Northern California
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Re: 20809001

Date of Sampling: 08-12-2009
Date of Receipt: 08-13-2009
Date of Report: 08-14-2009

MoldRANGE™: Extended Outdoor Comparison

Outdoor Location: 20809001-TM110OUTLS

Fungi Identified	Outdoor data	Typical Outdoor Data by Date†				Typical Outdoor Data by Location‡			
		Month: August				State: CA			
	spores/m3	low	med	high	freq %	low	med	high	freq %
Generally able to grow indoors*									
Alternaria	13	7	40	560	67	7	27	230	57
Bipolaris/Drechslera group	-	7	13	270	26	7	13	120	13
Chaetomium	27	7	13	130	14	7	13	120	19
Cladosporium	4,500	53	800	12,000	97	53	640	6,700	97
Curvularia	-	7	27	810	30	7	13	230	7
Epicoccum	-	7	20	280	31	7	13	160	20
Nigrospora	200	7	13	230	22	7	13	170	8
Other brown	-	7	13	110	32	7	13	88	36
Penicillium/Aspergillus types	1,400	27	270	3,400	85	33	210	2,500	85
Stachybotrys	-	7	13	380	3	7	13	270	5
Torula	27	7	13	160	16	7	13	150	12
Seldom found growing indoors**									
Ascospores	160	13	210	5,800	83	13	110	1,900	71
Basidiospores	1,000	13	430	22,000	96	13	210	7,000	93
Rusts	53	7	20	350	28	7	13	250	28
Smuts, Periconia, Myxomycetes	110	7	53	1,000	77	8	40	490	70
TOTAL SPORES/M3	7,490								

† The Typical Outdoor Data by Date represents the typical outdoor spore levels across North America for the month indicated. The last column represents the frequency of occurrence. The low, medium, and high values represent the 2.5, 50, and 97.5 percentile values of the spore type when it is detected. For example, if the frequency of occurrence is 63% and the low value is 53, it would mean that the given spore type is detected 63% of the time and, when detected, 2.5% of the time it is present in levels above the detection limit and below 53 spores/m3. These values are updated periodically, and if enough data is not available to make a statistically meaningful assessment, it is indicated with a dash.

‡ The Typical Outdoor Data by Location represents the typical outdoor spore levels for the region indicated for the entire year. As with the Typical Outdoor Data by Date, the four columns represent the frequency of occurrence and the typical low, medium, and high concentration values for the spore type indicated. These values are updated periodically, and if enough data is not available to make a statistically meaningful assessment, it is indicated with a dash.

*The spores in this category are generally capable of growing on wet building materials in addition to growing outdoors. Building related growth is dependent upon the fungal type, moisture level, type of material, and other factors. *Cladosporium* is one of the predominant spore types worldwide and is frequently present in high numbers. *Penicillium/Aspergillus* species colonize both outdoor and indoor wet surfaces rapidly and are very easily dispersed. Other genera are usually present in lesser numbers.

**These fungi are generally not found growing on wet building materials. For example, the rusts and smuts are obligate plant pathogens. However, in each group there are notable exceptions. For example, agents of wood decay are members of the basidiomycetes and high counts of a single morphological type of basidiospore on an inside sample should be considered significant.

Interpretation of the data contained in this report is left to the client or the persons who conducted the field work. This report is provided for informational and comparative purposes only and should not be relied upon for any other purpose. "Typical outdoor data" are based on the results of the analysis of samples delivered to and analyzed by EMLab P&K and assumptions regarding the origins of those samples. Sampling techniques, contaminants infecting samples, unrepresentative samples and other similar or dissimilar factors may affect these results. In addition, EMLab P&K may not have received and tested a representative number of samples for every region or time period. EMLab P&K hereby disclaims any liability for any and all direct, indirect, punitive, incidental, special or consequential damages arising out of the use or interpretation of the data contained in, or any actions taken or omitted in reliance upon, this report.

Client: Hygiene Technologies International, Inc.:
 Northern California
 C/O: Mr. Wesley Frey
 Re: 20809001

Date of Sampling: 08-12-2009
 Date of Receipt: 08-13-2009
 Date of Report: 08-14-2009

MoldSTAT™: Supplementary Statistical Spore Trap Report

Outdoor Summary: 20809001-TM101OUTLS:

Species detected	Outdoor sample spores/m3				Typical outdoor ranges (North America)	Freq. %
	<100	1K	10K	>100K		
Alternaria				27	7 - 27 - 400	52
Ascospores				160	13 - 160 - 4,600	76
Basidiospores				270	13 - 320 - 15,000	91
Chaetomium				27	7 - 13 - 130	12
Cladosporium				4,700	27 - 520 - 8,900	93
Epicoccum				13	7 - 17 - 320	25
Nigrospora				27	7 - 13 - 210	15
Other brown				13	7 - 13 - 110	32
Penicillium/Aspergillus types				320	26 - 210 - 2,500	80
Smuts, Periconia, Myxomycetes				270	7 - 40 - 850	69
Total				5,827		

The "Typical outdoor ranges" and "Freq. %" columns show the typical low, medium, and high spore counts per cubic meter and the frequency of occurrence for the given spore type. The low, medium, and high values represent the 2.5, 50, and 97.5 percentile values when the spore type is detected. For example, if the low value is 53 and the frequency of occurrence is 63%, it would mean that we typically detect the given spore type on 63 percent of all outdoor samples and, when detected, 2.5% of the time it is present in levels below 53 spores/m3.

Indoor Samples

Location: 20809001-TM102LS

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)	
Result: 2%	dF: 7 Result: 7.8542 Critical value: 14.0671 Inside Similar: Yes	Result: 0.3077	dF: 11 Result: 0.4932 Critical value: 0.5273 Outside Similar: No	Score: 107 Result: Low	
Species Detected		Spores/m3			
		<100	1K	10K	>100K
	Cladosporium				53
	Penicillium/Aspergillus types				53
	Rusts				40
	Total				146

Client: Hygiene Technologies International, Inc.:
 Northern California
 C/O: Mr. Wesley Frey
 Re: 20809001

Date of Sampling: 08-12-2009
 Date of Receipt: 08-13-2009
 Date of Report: 08-14-2009

MoldSTAT™: Supplementary Statistical Spore Trap Report

Location: 20809001-TM103LS

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)	
Result: < 1%	dF: 7 Result: 7.8542 Critical value: 14.0671 Inside Similar: Yes	Result: 0.0000	dF: N/A Result: N/A Critical value: N/A Outside Similar: N/A	Score: 100 Result: Low	
Species Detected		Spores/m3			
		<100	1K	10K	>100K
None Detected					N/A

Location: 20809001-TM104LS

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)	
Result: < 1%	dF: 7 Result: 7.8542 Critical value: 14.0671 Inside Similar: Yes	Result: 0.1818	dF: 10 Result: 0.6545 Critical value: 0.5515 Outside Similar: Yes	Score: 101 Result: Low	
Species Detected		Spores/m3			
		<100	1K	10K	>100K
Cladosporium					53
Total					53

Location: 20809001-TM105LS

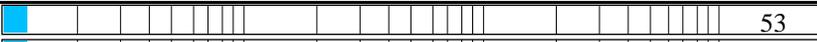
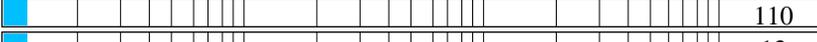
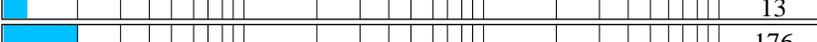
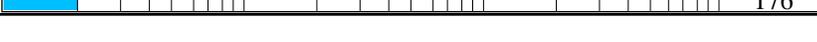
% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)	
Result: < 1%	dF: 7 Result: 7.8542 Critical value: 14.0671 Inside Similar: Yes	Result: 0.1818	dF: 10 Result: 0.4121 Critical value: 0.5515 Outside Similar: No	Score: 100 Result: Low	
Species Detected		Spores/m3			
		<100	1K	10K	>100K
Ascospores					53
Total					53

Client: Hygiene Technologies International, Inc.:
 Northern California
 C/O: Mr. Wesley Frey
 Re: 20809001

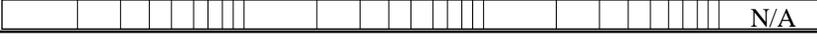
Date of Sampling: 08-12-2009
 Date of Receipt: 08-13-2009
 Date of Report: 08-14-2009

MoldSTAT™: Supplementary Statistical Spore Trap Report

Location: 20809001-TM106LS

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)	
Result: 3%	dF: 7 Result: 7.8542 Critical value: 14.0671 Inside Similar: Yes	Result: 0.3077	dF: 11 Result: 0.4864 Critical value: 0.5273 Outside Similar: No	Score: 116 Result: Low	
Species Detected		Spores/m3			
		<100	1K	10K	>100K
Cladosporium					53
Penicillium/Aspergillus types					110
Rusts					13
Total					176

Location: 20809001-TM107LS

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)	
Result: < 1%	dF: 7 Result: 7.8542 Critical value: 14.0671 Inside Similar: Yes	Result: 0.0000	dF: N/A Result: N/A Critical value: N/A Outside Similar: N/A	Score: 100 Result: Low	
Species Detected		Spores/m3			
		<100	1K	10K	>100K
None Detected					N/A

Location: 20809001-TM108LS

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)	
Result: < 1%	dF: 7 Result: 7.8542 Critical value: 14.0671 Inside Similar: Yes	Result: 0.0000	dF: N/A Result: N/A Critical value: N/A Outside Similar: N/A	Score: 100 Result: Low	
Species Detected		Spores/m3			
		<100	1K	10K	>100K
None Detected					N/A

Client: Hygiene Technologies International, Inc.:
 Northern California
 C/O: Mr. Wesley Frey
 Re: 20809001

Date of Sampling: 08-12-2009
 Date of Receipt: 08-13-2009
 Date of Report: 08-14-2009

MoldSTAT™: Supplementary Statistical Spore Trap Report

Location: 20809001-TM109LS

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)	
Result: 1%	dF: 7 Result: 7.8542 Critical value: 14.0671 Inside Similar: Yes	Result: 0.1667	dF: 11 Result: 0.3318 Critical value: 0.5273 Outside Similar: No	Score: 100 Result: Low	
Species Detected		Spores/m3			
		<100	1K	10K	>100K
Cladosporium					53
Rusts					13
Total					66

* The Friedman chi-square statistic is a non-parametric test that examines variation in a set of data (in this case, all indoor spore counts). The null hypothesis (H0) being tested is that there is no meaningful difference in the data for all indoor locations. The alternative hypothesis (used if the test disproves the null hypothesis) is that there is a difference between the indoor locations. The null hypothesis is rejected when the result of the test is greater than the critical value. The critical value that is displayed is based on the degrees of freedom (dF) of the test and a significance level of 0.05.

** An agreement ratio is a simple method for assessing the similarity of two samples (in this case the indoor sample and the outdoor summary) based on the spore types present. A score of one indicates that the types detected in one location are the same as that in the other. A score of zero indicates that none of the types detected indoors are present outdoors. Typically, an agreement of 0.8 or higher is considered high.

*** The Spearman rank correlation is a non-parametric test that examines correlation between two sets of data (in this case the indoor location and the outdoor summary). The null hypothesis (H0) being tested is that the indoor and outdoor samples are unrelated. The alternative hypothesis (used if the test disproves the null hypothesis) is that the samples are similar. The null hypothesis is rejected when the result of the test is greater than the critical value. The critical value that is displayed is based on the degrees of freedom (dF) of the test and a significance level of 0.05.

**** MoldSCORE™ is a specialized method for examining air sampling data. It is a score between 100 and 300, with 100 indicating a greater likelihood that the airborne indoor spores originated from the outside, and 300 indicating a greater likelihood that they originated from an inside source. The Result displayed is based on the numeric score given and will be either Low, Medium, or High, indicating a low, medium, or high likelihood that the spores detected originated from an indoor source. EMLab P&K reserves the right to, and may at anytime, modify or change the MoldScore algorithm without notice.

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 Northern California
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Date of Sampling: 08-12-2009
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MoldSTAT™: Supplementary Statistical Spore Trap Report

Outdoor Summary: 20809001-TM110OUTLS:

Species detected	Outdoor sample spores/m3				Typical outdoor ranges (North America)	Freq. %
	<100	1K	10K	>100K		
Alternaria				13	7 - 27 - 400	52
Ascospores				160	13 - 160 - 4,600	76
Basidiospores				1,000	13 - 320 - 15,000	91
Chaetomium				27	7 - 13 - 130	12
Cladosporium				4,500	27 - 520 - 8,900	93
Nigrospora				200	7 - 13 - 210	15
Penicillium/Aspergillus types				1,400	26 - 210 - 2,500	80
Rusts				53	7 - 17 - 310	22
Smuts, Periconia, Myxomycetes				110	7 - 40 - 850	69
Torula				27	7 - 13 - 160	11
Total				7,490		

The "Typical outdoor ranges" and "Freq. %" columns show the typical low, medium, and high spore counts per cubic meter and the frequency of occurrence for the given spore type. The low, medium, and high values represent the 2.5, 50, and 97.5 percentile values when the spore type is detected. For example, if the low value is 53 and the frequency of occurrence is 63%, it would mean that we typically detect the given spore type on 63 percent of all outdoor samples and, when detected, 2.5% of the time it is present in levels below 53 spores/m3.

Indoor Samples

Location: 20809001-TM102LS

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)	
Result: 1%	dF: 7 Result: 7.8542 Critical value: 14.0671 Inside Similar: Yes	Result: 0.4615	dF: 10 Result: 0.6364 Critical value: 0.5515 Outside Similar: Yes	Score: 104 Result: Low	
Species Detected		Spores/m3			
		<100	1K	10K	>100K
	Cladosporium				53
	Penicillium/Aspergillus types				53
	Rusts				40
	Total				146

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MoldSTAT™: Supplementary Statistical Spore Trap Report

Location: 20809001-TM103LS

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: < 1%	dF: 7 Result: 7.8542 Critical value: 14.0671 Inside Similar: Yes	Result: 0.0000	dF: N/A Result: N/A Critical value: N/A Outside Similar: N/A	Score: 100 Result: Low
Species Detected		Spores/m3		
		<100	1K	10K
				>100K
None Detected		N/A		

Location: 20809001-TM104LS

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: < 1%	dF: 7 Result: 7.8542 Critical value: 14.0671 Inside Similar: Yes	Result: 0.1818	dF: 10 Result: 0.6394 Critical value: 0.5515 Outside Similar: Yes	Score: 101 Result: Low
Species Detected		Spores/m3		
		<100	1K	10K
				>100K
Cladosporium		53		
Total		53		

Location: 20809001-TM105LS

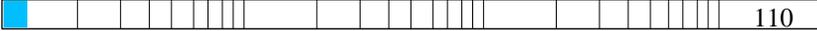
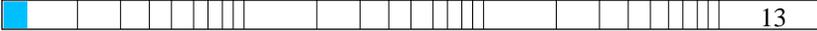
% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)
Result: < 1%	dF: 7 Result: 7.8542 Critical value: 14.0671 Inside Similar: Yes	Result: 0.1818	dF: 10 Result: 0.3970 Critical value: 0.5515 Outside Similar: No	Score: 100 Result: Low
Species Detected		Spores/m3		
		<100	1K	10K
				>100K
Ascospores		53		
Total		53		

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MoldSTAT™: Supplementary Statistical Spore Trap Report

Location: 20809001-TM106LS

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)	
Result: 2%	dF: 7 Result: 7.8542 Critical value: 14.0671 Inside Similar: Yes	Result: 0.4615	dF: 10 Result: 0.6273 Critical value: 0.5515 Outside Similar: Yes	Score: 112 Result: Low	
Species Detected		Spores/m3			
		<100	1K	10K	>100K
Cladosporium					53
Penicillium/Aspergillus types					110
Rusts					13
Total					176

Location: 20809001-TM107LS

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)	
Result: < 1%	dF: 7 Result: 7.8542 Critical value: 14.0671 Inside Similar: Yes	Result: 0.0000	dF: N/A Result: N/A Critical value: N/A Outside Similar: N/A	Score: 100 Result: Low	
Species Detected		Spores/m3			
		<100	1K	10K	>100K
None Detected					N/A

Location: 20809001-TM108LS

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)	
Result: < 1%	dF: 7 Result: 7.8542 Critical value: 14.0671 Inside Similar: Yes	Result: 0.0000	dF: N/A Result: N/A Critical value: N/A Outside Similar: N/A	Score: 100 Result: Low	
Species Detected		Spores/m3			
		<100	1K	10K	>100K
None Detected					N/A

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 Northern California
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Date of Sampling: 08-12-2009
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MoldSTAT™: Supplementary Statistical Spore Trap Report

Location: 20809001-TM109LS

% of outdoor total spores/m3	Friedman chi-square* (indoor variation)	Agreement ratio** (indoor/outdoor)	Spearman rank correlation*** (indoor/outdoor)	MoldSCORE**** (indoor/outdoor)	
Result: < 1%	dF: 7 Result: 7.8542 Critical value: 14.0671 Inside Similar: Yes	Result: 0.3333	dF: 10 Result: 0.4758 Critical value: 0.5515 Outside Similar: No	Score: 101 Result: Low	
Species Detected		Spores/m3			
		<100	1K	10K	>100K
Cladosporium					53
Rusts					13
Total					66

* The Friedman chi-square statistic is a non-parametric test that examines variation in a set of data (in this case, all indoor spore counts). The null hypothesis (H0) being tested is that there is no meaningful difference in the data for all indoor locations. The alternative hypothesis (used if the test disproves the null hypothesis) is that there is a difference between the indoor locations. The null hypothesis is rejected when the result of the test is greater than the critical value. The critical value that is displayed is based on the degrees of freedom (dF) of the test and a significance level of 0.05.

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*** The Spearman rank correlation is a non-parametric test that examines correlation between two sets of data (in this case the indoor location and the outdoor summary). The null hypothesis (H0) being tested is that the indoor and outdoor samples are unrelated. The alternative hypothesis (used if the test disproves the null hypothesis) is that the samples are similar. The null hypothesis is rejected when the result of the test is greater than the critical value. The critical value that is displayed is based on the degrees of freedom (dF) of the test and a significance level of 0.05.

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MoldSCORE™: Spore Trap Report

Outdoor Sample: 20809001-TM101OUTLS

Fungi Identified	Outdoor sample spores/m3				Raw count	Spores/m3
	<100	1K	10K	>100K		
Generally able to grow indoors*						
Alternaria					2	27
Bipolaris/Drechslera group					ND	< 13
Chaetomium					2	27
Cladosporium					88	4,700
Curvularia					ND	< 13
Epicoccum					1	13
Nigrospora					2	27
Other brown					1	13
Penicillium/Aspergillus types†					6	320
Stachybotrys					ND	< 13
Torula					ND	< 13
Seldom found growing indoors**						
Ascospores‡‡					3	160
Basidiospores‡‡					5	270
Rusts					ND	< 13
Smuts, Periconia, Myxomycetes‡‡					20	270
Total						5,827

Location: 20809001-TM102LS

Fungi Identified	Indoor sample spores/m3				Raw count	Spores/m3
	<100	1K	10K	>100K		
Generally able to grow indoors*						
Alternaria					ND	< 13
Bipolaris/Drechslera group					ND	< 13
Chaetomium					ND	< 13
Cladosporium					1	53
Curvularia					ND	< 13
Nigrospora					ND	< 13
Penicillium/Aspergillus types†					1	53
Stachybotrys					ND	< 13
Torula					ND	< 13
Seldom found growing indoors**						
Ascospores‡‡					ND	< 13
Basidiospores‡‡					ND	< 13
Rusts					3	40
Smuts, Periconia, Myxomycetes‡‡					ND	< 13
Total						146

MoldSCORE‡			
100	200	300	Score
			100
			100
			100
			100
			100
			100
			107
			100
			100
			100
			100
			116
			100
Final MoldSCORE			107

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MoldSCORE™: Spore Trap Report

Location: 20809001-TM103LS

Fungi Identified	Indoor sample spores/m3				Raw count	Spores/m3	MoldSCORE‡			
	<100	1K	10K	>100K			100	200	300	Score
Generally able to grow indoors*										
Alternaria					ND	< 13				100
Bipolaris/Drechslera group					ND	< 13				100
Chaetomium					ND	< 13				100
Cladosporium					ND	< 13				100
Curvularia					ND	< 13				100
Nigrospora					ND	< 13				100
Penicillium/Aspergillus types†					ND	< 13				100
Stachybotrys					ND	< 13				100
Torula					ND	< 13				100
Seldom found growing indoors**										
Ascospores††					ND	< 13				100
Basidiospores††					ND	< 13				100
Rusts					ND	< 13				100
Smuts, Periconia, Myxomycetes††					ND	< 13				100
Total						N/A				Final MoldSCORE 100

Location: 20809001-TM104LS

Fungi Identified	Indoor sample spores/m3				Raw count	Spores/m3	MoldSCORE‡			
	<100	1K	10K	>100K			100	200	300	Score
Generally able to grow indoors*										
Alternaria					ND	< 13				100
Bipolaris/Drechslera group					ND	< 13				100
Chaetomium					ND	< 13				100
Cladosporium					1	53				101
Curvularia					ND	< 13				100
Nigrospora					ND	< 13				100
Penicillium/Aspergillus types†					ND	< 13				100
Stachybotrys					ND	< 13				100
Torula					ND	< 13				100
Seldom found growing indoors**										
Ascospores††					ND	< 13				100
Basidiospores††					ND	< 13				100
Rusts					ND	< 13				100
Smuts, Periconia, Myxomycetes††					ND	< 13				100
Total						53				Final MoldSCORE 101

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MoldSCORE™: Spore Trap Report

Location: 20809001-TM105LS

Fungi Identified	Indoor sample spores/m3				Raw count	Spores/m3	MoldSCORE‡			
	<100	1K	10K	>100K			100	200	300	Score
Generally able to grow indoors*										
Alternaria					ND	< 13	█			100
Bipolaris/Drechslera group					ND	< 13	█			100
Chaetomium					ND	< 13	█			100
Cladosporium					ND	< 13	█			100
Curvularia					ND	< 13	█			100
Nigrospora					ND	< 13	█			100
Penicillium/Aspergillus types†					ND	< 13	█			100
Stachybotrys					ND	< 13	█			100
Torula					ND	< 13	█			100
Seldom found growing indoors**										
Ascospores††	█				1	53	█	█		121
Basidiospores††					ND	< 13	█			100
Rusts					ND	< 13	█			100
Smuts, Periconia, Myxomycetes††					ND	< 13	█			100
Total						53				Final MoldSCORE 100

Location: 20809001-TM106LS

Fungi Identified	Indoor sample spores/m3				Raw count	Spores/m3	MoldSCORE‡			
	<100	1K	10K	>100K			100	200	300	Score
Generally able to grow indoors*										
Alternaria					ND	< 13	█			100
Bipolaris/Drechslera group					ND	< 13	█			100
Chaetomium					ND	< 13	█			100
Cladosporium	█				1	53	█			100
Curvularia					ND	< 13	█			100
Nigrospora					ND	< 13	█			100
Penicillium/Aspergillus types†	█				2	110	█	█		116
Stachybotrys					ND	< 13	█			100
Torula					ND	< 13	█			100
Seldom found growing indoors**										
Ascospores††					ND	< 13	█			100
Basidiospores††					ND	< 13	█			100
Rusts	█				1	13	█			105
Smuts, Periconia, Myxomycetes††					ND	< 13	█			100
Total						176				Final MoldSCORE 116

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MoldSCORE™: Spore Trap Report

Location: 20809001-TM107LS

Fungi Identified	Indoor sample spores/m3				Raw count	Spores/m3	MoldSCORE‡			
	<100	1K	10K	>100K			100	200	300	Score
Generally able to grow indoors*										
Alternaria					ND	< 13	█	█	█	100
Bipolaris/Drechslera group					ND	< 13	█	█	█	100
Chaetomium					ND	< 13	█	█	█	100
Cladosporium					ND	< 13	█	█	█	100
Curvularia					ND	< 13	█	█	█	100
Nigrospora					ND	< 13	█	█	█	100
Penicillium/Aspergillus types†					ND	< 13	█	█	█	100
Stachybotrys					ND	< 13	█	█	█	100
Torula					ND	< 13	█	█	█	100
Seldom found growing indoors**										
Ascospores††					ND	< 13	█	█	█	100
Basidiospores††					ND	< 13	█	█	█	100
Rusts					ND	< 13	█	█	█	100
Smuts, Periconia, Myxomycetes††					ND	< 13	█	█	█	100
Total						N/A	Final MoldSCORE 100			

Location: 20809001-TM108LS

Fungi Identified	Indoor sample spores/m3				Raw count	Spores/m3	MoldSCORE‡			
	<100	1K	10K	>100K			100	200	300	Score
Generally able to grow indoors*										
Alternaria					ND	< 13	█	█	█	100
Bipolaris/Drechslera group					ND	< 13	█	█	█	100
Chaetomium					ND	< 13	█	█	█	100
Cladosporium					ND	< 13	█	█	█	100
Curvularia					ND	< 13	█	█	█	100
Nigrospora					ND	< 13	█	█	█	100
Penicillium/Aspergillus types†					ND	< 13	█	█	█	100
Stachybotrys					ND	< 13	█	█	█	100
Torula					ND	< 13	█	█	█	100
Seldom found growing indoors**										
Ascospores††					ND	< 13	█	█	█	100
Basidiospores††					ND	< 13	█	█	█	100
Rusts					ND	< 13	█	█	█	100
Smuts, Periconia, Myxomycetes††					ND	< 13	█	█	█	100
Total						N/A	Final MoldSCORE 100			

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MoldSCORE™: Spore Trap Report

Location: 20809001-TM109LS

Fungi Identified	Indoor sample spores/m3				Raw count	Spores/m3	MoldSCORE‡			
	<100	1K	10K	>100K			100	200	300	Score
Generally able to grow indoors*										
Alternaria					ND	< 13	100			
Bipolaris/Drechslera group					ND	< 13	100			
Chaetomium					ND	< 13	100			
Cladosporium					1	53	100			
Curvularia					ND	< 13	100			
Nigrospora					ND	< 13	100			
Penicillium/Aspergillus types†					ND	< 13	100			
Stachybotrys					ND	< 13	100			
Torula					ND	< 13	100			
Seldom found growing indoors**										
Ascospores††					ND	< 13	100			
Basidiospores††					ND	< 13	100			
Rusts					1	13	105			
Smuts, Periconia, Myxomycetes††					ND	< 13	100			
Total						66	Final MoldSCORE 100			

*The spores in this category are generally capable of growing on wet building materials in addition to growing outdoors. Building related growth is dependent upon the fungal type, moisture level, type of material, and other factors. *Cladosporium* is one of the predominant spore types worldwide and is frequently present in high numbers. *Penicillium/Aspergillus* species colonize both outdoor and indoor wet surfaces rapidly and are very easily dispersed. Other genera are usually present in lesser numbers.

**These fungi are generally not found growing on wet building materials. For example, the rusts and smuts are obligate plant pathogens. However, in each group there are notable exceptions. For example, agents of wood decay are members of the basidiomycetes and high counts of a single morphological type of basidiospore on an inside sample should be considered significant.

†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.

††Most of these spore types are not seen with culturable methods (Anderson sampling), although some may appear as non-sporulating fungi. Most of the basidiospores are "mushroom" spores.

‡Rated on a scale from 100 to 300. A rating less than 150 is low and indicates a low probability of spores originating inside. A rating greater than 250 is high and indicates a high probability that the spores originated from inside, presumably from indoor mold growth. A rating between 150 and 250 indicates a moderate likelihood of indoor fungal growth. MoldSCORE is NOT intended for wall cavity samples. It is intended for ambient air samples in residences. Using the analysis on other samples (like wall cavity samples) will lead to misleading results.

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 Re: 20809001

Date of Sampling: 08-12-2009
 Date of Receipt: 08-13-2009
 Date of Report: 08-14-2009

MoldSCORE™: Spore Trap Report

Location: 20809001-TM103LS

Fungi Identified	Indoor sample spores/m3				Raw count	Spores/m3	MoldSCORE‡			
	<100	1K	10K	>100K			100	200	300	Score
Generally able to grow indoors*										
Alternaria					ND	< 13	█			100
Bipolaris/Drechslera group					ND	< 13	█			100
Chaetomium					ND	< 13	█			100
Cladosporium					ND	< 13	█			100
Curvularia					ND	< 13	█			100
Nigrospora					ND	< 13	█			100
Penicillium/Aspergillus types†					ND	< 13	█			100
Stachybotrys					ND	< 13	█			100
Torula					ND	< 13	█			100
Seldom found growing indoors**										
Ascospores††					ND	< 13	█			100
Basidiospores††					ND	< 13	█			100
Rusts					ND	< 13	█			100
Smuts, Periconia, Myxomycetes††					ND	< 13	█			100
Total						N/A				Final MoldSCORE 100

Location: 20809001-TM104LS

Fungi Identified	Indoor sample spores/m3				Raw count	Spores/m3	MoldSCORE‡			
	<100	1K	10K	>100K			100	200	300	Score
Generally able to grow indoors*										
Alternaria					ND	< 13	█			100
Bipolaris/Drechslera group					ND	< 13	█			100
Chaetomium					ND	< 13	█			100
Cladosporium	█				1	53	█			101
Curvularia					ND	< 13	█			100
Nigrospora					ND	< 13	█			100
Penicillium/Aspergillus types†					ND	< 13	█			100
Stachybotrys					ND	< 13	█			100
Torula					ND	< 13	█			100
Seldom found growing indoors**										
Ascospores††					ND	< 13	█			100
Basidiospores††					ND	< 13	█			100
Rusts					ND	< 13	█			100
Smuts, Periconia, Myxomycetes††					ND	< 13	█			100
Total						53				Final MoldSCORE 101

Client: Hygiene Technologies International, Inc.:
 Northern California
 C/O: Mr. Wesley Frey
 Re: 20809001

Date of Sampling: 08-12-2009
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 Date of Report: 08-14-2009

MoldSCORE™: Spore Trap Report

Location: 20809001-TM105LS

Fungi Identified	Indoor sample spores/m3				Raw count	Spores/m3	MoldSCORE‡			
	<100	1K	10K	>100K			100	200	300	Score
Generally able to grow indoors*										
Alternaria					ND	< 13	█			100
Bipolaris/Drechslera group					ND	< 13	█			100
Chaetomium					ND	< 13	█			100
Cladosporium					ND	< 13	█			100
Curvularia					ND	< 13	█			100
Nigrospora					ND	< 13	█			100
Penicillium/Aspergillus types†					ND	< 13	█			100
Stachybotrys					ND	< 13	█			100
Torula					ND	< 13	█			100
Seldom found growing indoors**										
Ascospores††	█				1	53	█	█		121
Basidiospores††					ND	< 13	█			100
Rusts					ND	< 13	█			100
Smuts, Periconia, Myxomycetes††					ND	< 13	█			100
Total						53				Final MoldSCORE 100

Location: 20809001-TM106LS

Fungi Identified	Indoor sample spores/m3				Raw count	Spores/m3	MoldSCORE‡			
	<100	1K	10K	>100K			100	200	300	Score
Generally able to grow indoors*										
Alternaria					ND	< 13	█			100
Bipolaris/Drechslera group					ND	< 13	█			100
Chaetomium					ND	< 13	█			100
Cladosporium	█				1	53	█	█		100
Curvularia					ND	< 13	█			100
Nigrospora					ND	< 13	█			100
Penicillium/Aspergillus types†	█				2	110	█	█		112
Stachybotrys					ND	< 13	█			100
Torula					ND	< 13	█			100
Seldom found growing indoors**										
Ascospores††					ND	< 13	█			100
Basidiospores††					ND	< 13	█			100
Rusts	█				1	13	█	█		105
Smuts, Periconia, Myxomycetes††					ND	< 13	█			100
Total						176				Final MoldSCORE 112

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MoldSCORE™: Spore Trap Report

Location: 20809001-TM107LS

Fungi Identified	Indoor sample spores/m3				Raw count	Spores/m3	MoldSCORE‡			
	<100	1K	10K	>100K			100	200	300	Score
Generally able to grow indoors*										
Alternaria					ND	< 13	█			100
Bipolaris/Drechslera group					ND	< 13	█			100
Chaetomium					ND	< 13	█			100
Cladosporium					ND	< 13	█			100
Curvularia					ND	< 13	█			100
Nigrospora					ND	< 13	█			100
Penicillium/Aspergillus types†					ND	< 13	█			100
Stachybotrys					ND	< 13	█			100
Torula					ND	< 13	█			100
Seldom found growing indoors**										
Ascospores††					ND	< 13	█			100
Basidiospores††					ND	< 13	█			100
Rusts					ND	< 13	█			100
Smuts, Periconia, Myxomycetes††					ND	< 13	█			100
Total						N/A				Final MoldSCORE 100

Location: 20809001-TM108LS

Fungi Identified	Indoor sample spores/m3				Raw count	Spores/m3	MoldSCORE‡			
	<100	1K	10K	>100K			100	200	300	Score
Generally able to grow indoors*										
Alternaria					ND	< 13	█			100
Bipolaris/Drechslera group					ND	< 13	█			100
Chaetomium					ND	< 13	█			100
Cladosporium					ND	< 13	█			100
Curvularia					ND	< 13	█			100
Nigrospora					ND	< 13	█			100
Penicillium/Aspergillus types†					ND	< 13	█			100
Stachybotrys					ND	< 13	█			100
Torula					ND	< 13	█			100
Seldom found growing indoors**										
Ascospores††					ND	< 13	█			100
Basidiospores††					ND	< 13	█			100
Rusts					ND	< 13	█			100
Smuts, Periconia, Myxomycetes††					ND	< 13	█			100
Total						N/A				Final MoldSCORE 100

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MoldSCORE™: Spore Trap Report

Location: 20809001-TM109LS

Fungi Identified	Indoor sample spores/m3				Raw count	Spores/m3	MoldSCORE‡			
	<100	1K	10K	>100K			100	200	300	Score
Generally able to grow indoors*										
Alternaria					ND	< 13	100			
Bipolaris/Drechslera group					ND	< 13	100			
Chaetomium					ND	< 13	100			
Cladosporium					1	53	101			
Curvularia					ND	< 13	100			
Nigrospora					ND	< 13	100			
Penicillium/Aspergillus types†					ND	< 13	100			
Stachybotrys					ND	< 13	100			
Torula					ND	< 13	100			
Seldom found growing indoors**										
Ascospores††					ND	< 13	100			
Basidiospores††					ND	< 13	100			
Rusts					1	13	105			
Smuts, Periconia, Myxomycetes††					ND	< 13	100			
Total						66	Final MoldSCORE 101			

*The spores in this category are generally capable of growing on wet building materials in addition to growing outdoors. Building related growth is dependent upon the fungal type, moisture level, type of material, and other factors. *Cladosporium* is one of the predominant spore types worldwide and is frequently present in high numbers. *Penicillium/Aspergillus* species colonize both outdoor and indoor wet surfaces rapidly and are very easily dispersed. Other genera are usually present in lesser numbers.

**These fungi are generally not found growing on wet building materials. For example, the rusts and smuts are obligate plant pathogens. However, in each group there are notable exceptions. For example, agents of wood decay are members of the basidiomycetes and high counts of a single morphological type of basidiospore on an inside sample should be considered significant.

†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.

††Most of these spore types are not seen with culturable methods (Anderson sampling), although some may appear as non-sporulating fungi. Most of the basidiospores are "mushroom" spores.

‡Rated on a scale from 100 to 300. A rating less than 150 is low and indicates a low probability of spores originating inside. A rating greater than 250 is high and indicates a high probability that the spores originated from inside, presumably from indoor mold growth. A rating between 150 and 250 indicates a moderate likelihood of indoor fungal growth. MoldSCORE is NOT intended for wall cavity samples. It is intended for ambient air samples in residences. Using the analysis on other samples (like wall cavity samples) will lead to misleading results.

