



**MOLD INVESTIGATION**

**FEBRUARY 21 & 24, 2006**

**BY**

**DEPARTMENT OF GENERAL SERVICES**

**MicroTest® Laboratories, Inc.**  
Environmental Biological Testing  
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February 27, 2006

State of California, DGS/BPM  
1304 O Street Suite 300  
Sacramento, CA 95814

Re: 450 N Street- BOE

Dear Sirs,

Please find following the results of the sampling obtained at 450 N Street- BOE on 2/21/06 and 2/24/06. The areas sampled were chosen, by you, for Zefon "Viable/Non-Viable" air sampling analyses. No *Stachybotrys chartarum* was observed. The concentration and distribution of the recovered populations fall within the expected normal range in the areas analyzed.

For your convenience, the following is an interpretative guideline provided for your use.

**Interpretive Guidelines:**

**Normal Spore Levels:** Indoor spore levels usually average 30% to 80% of the outdoor spore levels at the time of sampling, with the approximate same distribution of spore types. Filtered air, air-conditioned air or air that is not in the proximity of outdoor sources may drop to 5% to 15% of the outdoor spore levels at the time of sampling. As these are general guidelines, a major factor is the accessibility of outdoor air. A residence with heavy foot traffic, open door and windows, etc., may average 95% of the outdoor levels. An office building with limited air exchange may average as low as 2% of the outdoor levels. Dusty interiors may exceed 100% of the outdoor spore levels but will mirror the outdoor distribution of spore types.

**Problem Interiors:** A substantial increase of one or two spore types, which are inconsistent and not reflective of the outside, spore distribution. This is usually indicative of mold growth.

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Client Name:	State of California BPM 1304 "O" Street Suite 300 Sacramento, CA 95814	Contact Name:	Larry Bellani, CIH	Instrument Used:	Zefon
Project:	450 N Street Room 327	Sampler:	Larry Bellani, CIH		
		Sampling Date:	2/21/06 & 2/24/06		
		Receipt Date:	2/24/06		
		Report Date:	2/27/06		
		Accession No:	605507-605511		

Non-Viable Bioaerosol Analysis

Client Project Identification	10013547 Parking Garage- On Open Roof			10013588 Rm 327- S. Wall Near Column J-21- Partition			10013558 Rm 327- S. Wall Near Column J-20-File Cab.			10018322 Rm. 327- S. Wall Near Column J-21		
	raw ct.	Cts/m <sup>3</sup>	% Area	raw ct.	Cts/m <sup>3</sup>	% Area	raw ct.	Cts/m <sup>3</sup>	% Area	raw ct.	Cts/m <sup>3</sup>	% Area
Alternaria												
Arthrinium												
Ascospores	111	1480	41%	7	93	32%	5	67	31%	5	67	45%
Aureobasidium												
Basidiospores	96	1280	35%	7	93	32%	2	27	13%	1	13	9%
Botrytis												
Chaetomium												
Cladosporium	36	480	13%	1	13	5%	1	13	6%			
Curvularia												
Drechslera/Bipolaris Group												
Nigrospora				1	13	5%						
Hyphae Fragments												
Penicillium/Aspergillus*	15	200	5%	5	67	23%	6	80	38%	3	40	27%
Pollen	12	160	4%	1	13	5%	1	13	6%	2	27	18%
Rusts							1	13	6%			
Pilthomyces												
Smuts/Peric/Myxomycetes	3	40	1%									
Stachybotrys												
Stemphylium												
Torula												
Ulocladium												
<b>Total Spores (Cts/m<sup>3</sup>):</b>	<b>273</b>	<b>3,639</b>		<b>22</b>	<b>293</b>		<b>16</b>	<b>213</b>		<b>11</b>	<b>147</b>	
Sample Volume (Liters)	75			75			75			75		
Sample Time Minutes:	5			5			5			5		
Background Debris**	Moderate			Moderate			Moderate			Few		

\*The spores of *Penicillium/Aspergillus* cannot be differentiated by non-viable sampling methods.

\*\*Fibers, skin fragments and dust are indicated by few, moderate, many, and abundant.

Comments:

Technologist: Rebecca Huty, MicroTest Labs™, Inc.

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		Report Date:	2/27/06
		Accession No:	605507-605511
		Instrument Used:	Zefon

Non-Viable Bioaerosol Analysis

Client Project Identification	⇒ 10013547 Parking Garage- On Open Roof	10016333 Room 327- S. Wall Near Column J-20		
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	raw ct.	Cts/m <sup>3</sup>	% Area	raw ct.	Cts/m <sup>3</sup>	% Area	raw ct.	Cts/m <sup>3</sup>	% Area	raw ct.	Cts/m <sup>3</sup>	% Area
Alternaria												
Arthrinium												
Ascospores	111	1480	41%	4	53	57%						
Aureobasidium												
Basidiospores	96	1280	35%	1	13	14%						
Botrytis												
Chaetomium												
Cladosporium	36	480	13%									
Curvularia												
Drechslera/Bipolaris Group												
Nigrospora												
Hyphae Fragments												
Penicillium/Aspergillus*	15	200	5%	2	27	29%						
Pollen	12	160	4%									
Rusts												
Pithomyces												
Smuts/Peric/Myxomycetes	3	40	1%									
Stachybotrys												
Stemphylium												
Torula												
Ulocladium												

Total Spores (Cts/m <sup>3</sup> ):	273	3,639		7	93							
Sample Volume (Liters)	75			75								
Sample Time Minutes:	5			5								
Background Debris**	Moderate			Few								

\*The spores of *Penicillium/Aspergillus* cannot be differentiated by non-viable sampling methods.

\*\*Fibers, skin fragments and dust are indicated by few, moderate, many, and abundant.

Comments:

Technologist: Rebecca Huty, MicroTest Labs™, Inc.

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**Suggested Guidelines for Mold Spore and Skin Cell Fragment Concentrations  
Residential Buildings (Counts/Cubic Meter) m<sup>3</sup>**

Suggested Guideline	Total	<i>Penicillium/Aspergillus</i>	Ascospores/ Basidiospores	<i>Cladosporium</i>	Zygomycetes	Skin Cell Fragments
"Average" Clean Residence	<1,800	<600	<200	<100	<100	<9,000
"Clean" Residence (Maximum)	<3,000	<1,400	*<900	*<800	<600	<16,000
Indoor Contamination Present	***>8,000	>4,000	*>1,500	*>600	>700	>20,000
Indoor Amplification May Be Occurring	*>12,000	>8,000	*>1,500	*>1350	>1,000	**>30,000

Reference: *Airborne Mold Spore Concentrations in Commercial & Residential Buildings*, Daniel M. Baxter, Environmental Testing Associates, San Diego, CA., 1995.

- \* May depend on outside spore concentration for each species
- \*\* Based on mean plus standard deviation of contaminated residences indicating inadequate housekeeping
- \*\*\* Based on median of contaminated residences

**Summary of Mold Spore Species Distribution**

Building Type	<i>Penicillium/Aspergillus</i>	Ascospores/ Basidiospores	<i>Cladosporium</i>	Zygomycetes	Skin Cell Fragments
"Clean" Commercial Buildings	37%	24%	11%	5%	23%
"Contaminated" Commercial Buildings	66%	6%	4%	10%	14%
"Clean" Residential Buildings	39%	18%	21%	<1%	22%
"Contaminated" Residential Buildings	20%	76%	1%	1%	2%
"Contaminated Buildings Sampled During Drywall Demolition	92%	<1%	<1%	5%	3%

Reference: *Airborne Mold Spore Concentrations in Commercial & Residential Buildings*, Daniel M. Baxter, Environmental Testing Associates, San Diego, CA., 1995.

Thank you for allowing *MicroTest™* Laboratories, Inc. to provide the microbiological services you required.

Sincerely,

Rebecca Hatty  
President  
*MicroTest™* Laboratories, Inc.

RH/amc