

May.22. 2007 12:23AM

No.2908 P. 1/9

**LIMITED SCOPE
INDOOR AIR QUALITY
MOLD SAMPLING REPORT**

OF

**CITY HALL - CID DEPARTMENT
AND ENGINEERING & PLANNING
DEPARTMENT**

City of Shawnee
222 N. Broadway
Shawnee, Oklahoma

FOR

CITY OF SHAWNEE

222 N. Broadway
Shawnee, Oklahoma 74801

May 16, 2007

Services Provided By:

Air & Earth, Inc.
*10025 S. Sooner Road
Oklahoma City, Oklahoma 73165
(405) 691-3177 office
(405) 912-8908 fax*

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EXECUTIVE SUMMARY

On May 21, 2007, a "Limited Scope" indoor air quality (IAQ) sampling excursion was conducted for particulates along with quantitative non-culturable mold (fungi) testing in the City Hall – Criminal Investigation Division area and the Engineering & Planning Department for The City of Shawnee, Shawnee, Oklahoma. Purpose of the sampling was to quantify groups of airborne fungi along with supplemental testing. Variables such as climate, interviews, observation, etc. were considered in the formulation of the sampling excursion.

During the course of the sampling excursion, specific notations were observed as potential provocation.

OVERVIEW OF THE SAMPLING EXCURSION

Sampling of the designated areas was organized by obtaining general background information. Mr. John Krywincki and Mr. Frank Loman, with The City of Shawnee, provided the majority of the information. A tour of the area was conducted. After reviewing, a plan for the sampling strategy was developed.

INTERVIEWS:

In the CID area, Mr. Krywincki stated that the detectives are experiencing headaches, nausea and respiratory ailments. Mr. Loman identified a sweating pipe along the northwest area above the ceiling tiles with which the tiles are periodically changed.

There are no complaints in the engineering & planning offices per Mr. Krywincki. Mr. Loman indicated that roof leaks were chronic in this area.

INSIDE AREA OBSERVATION:

A musty odor was observed in the CID area. Mold was observed on the stained ceiling tile just below the sweating pipe. A moderate accumulation of dust was observed. Air ducting was observed to contain cumulative dust with some slight rusting. Ceiling tiles had some deposits resembling soot. Floor area was carpeted.

No odors were observed in the Engineering & Planning area. Ceiling tiles were moisture damaged. Ceiling height in excess of 18feet was inaccessible for close observation and sampling.

OUTSIDE AREA OBSERVATION:

Per the Weather Channel, conditions in the 74801 zip code area were partly cloudy with temperature at 80°. Humidity was at 60% and winds from the south-southwest at 12mph. There were no noticeable odors in the area.

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MONITORING:

Monitoring techniques used to aid in the identification of possible air quality concerns consisted of measurements of temperature, relative humidity and carbon dioxide levels using the Extech CO₂ analyzer air quality-monitoring device. Below are the conclusions of monitoring and analyses during the investigation.

INSTRUMENT

Extech CO2 Analyzer -	<u>Temperature</u>	<u>Relative Humidity</u>	<u>Carbon Dioxide</u>
CID Area Average	75.0 ⁰ F	39.7%	362ppm
CID Hallway Area	72.6 ⁰ F	46.6%	445ppm
Police Dept. Area	72.6 ⁰ F	37.6%	465ppm
Engineering & Planning Area	74.8 ⁰ F	40.6%	547ppm
Engineering & Planning Hallway	74.6 ⁰ F	42.2%	547ppm
Outside Area Average	93.7 ⁰ F	24.9%	110ppm

Monitoring techniques used to aid in the identification of nuisance dust levels consisted of measurements from the MIE laser optical air quality monitoring device. Testing was conducted under ambient conditions during investigation. Below are the conclusions of monitoring in the designated area.

INSTRUMENT

MIE -	<u>TWA</u> <u>Average</u>	<u>PEAK</u> <u>Average</u>
CID Area	.002ug/m ³	.002ug/m ³
CID Area (Floor Level)	.008ug/m ³	.162ug/m ³
Engineering & Planning Area	.003ug/m ³	.019ug/m ³

Monitoring techniques used to aid in the identification of particulate size and concentration consisted of measurements from the Met-One HHPC-6 laser particle counter. Below are the conclusions of monitoring in the designated area.

INSTRUMENT

Met-One HHPC-6 -	<u>0.3ug</u>	<u>0.5ug</u>	<u>0.7ug</u>	<u>1.0ug</u>	<u>2.0ug</u>	<u>5.0ug</u>
CID Area	12,238	1,411	504	631	440	114
Police Dept. Area	12,863	4,530	3,479	3,045	2,360	641
Engineering & Planning	25,219	1,633	830	644	440	66
Eng. & Plan. Hallway	28,772	1,618	631	460	267	54

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Monitoring techniques used to aid in the quantification of nonculturable mold consisted of Allergenco-D brand spore trap cassettes with a Zefon brand air-sampling pump specifically designed for the cassettes. Analytical data is expressed in Counts per cubic meter (C/m³). Below are the conclusions of monitoring and analyses in the area.

Date: 05-16-07 * = Aspergillus/Penicillium group not defined.

	CID Dept.	CID Hallway	Police Central Office	E&P Dept. Receptionist Office	E&P Dept. Main Hallway	Outside
	Results Counts/m ³	Results Counts/m ³	Results Counts/m ³	Results Counts/m ³	Results Counts/m ³	Results Counts/m ³
Alternaria	13	27	27		13	40
Amerospores		13				13
Ascospores	80	120	107	40	400	1493
Aspergillus/ Penicillium Group					40	
Basidiospores			13		13	67
Bipolaris/ Drechslera Group (2)	13	40	27	27	13	13
Cercospora					13	53
Cladosporium	133	53	80	27	107	520
Epicoccum						13
Hyphal Fragments	27	27	40	13	53	107
Mildew						13
Periconia/ Myxomycetes/ Smuts	27	80	93	53		53
Pithomyces/ Ulocladium		13				
Pollen	13	27	13			120
Rusts						13
TOTALS	306	400	400	160	652	2518
Percent Coverage	Moderate	Moderate	Moderate	Low	Moderate	High
	35	40	35	25	10	40

Sampling techniques used to aid in the identification of mold on surface areas were conducted by the use of special designed tape and microscope slides (Bio-Tapes) for qualitative nonculturable mold. Analytical data is expressed as Few – 10 or fewer fungal structures, Moderate – fungal structures between Few and Abundant, and Abundant – fungal structures @ 75% or more of the analyzed area or more than 500 fungal structures present.

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Mold Identification	CID Dept. Stained Ceiling Tile
Alternaria	Abundant
Bipolaris/ Drechslera Group (2)	Moderate
Epicoccum	Abundant
Pollen	Few
Comments	

SUMMARY OF SURVEY

Extech CO2 Analyzer

Readings show relative humidity levels are good and within range between 40% and 60%. Temperature and carbon dioxide levels were good.

MIE Dust Meter

Readings show dust levels in the ambient air were adequate.

Met-One HHPC-6

Readings show ambient breathing zone (4.5ft) particulate levels were within ISO 14644-1 Class ISO-10 cleanliness for clean room standards.

Mold Findings

Air readings in the 0 to 200 Counts/m³ are considered "Low" while readings in the 200 to 1,000 Counts/m³ are considered "Moderate" and readings above 1,000 Counts/m³ are considered "High". Comparative readings with the outside air show levels were within the ideal range of 50% of reference sampling.

Bio-tape sample on the stained ceiling tile located in the CID Department indicate alternaria and epicoccum in abundance.

RECOMMENDATIONS

It is recommended that the sources of the moisture problems be eliminated to control the opportunity for mold growth on impacted surfaces. Deep cleaning of surfaces and carpeting by a professional cleaning company could aid in the reduction of bacteriological or nuisance dust impairment. Due to interior age and occupants' symptoms described, testing for volatile organic compounds (VOCs) may be recommended.

SUMMARY

As of this survey, no further recommendations are expressed.


 David Schweikhart/Vice President

5-16-07
 Date

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Laboratory Test Results

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1496666

AIR & EARTH, INC.

1305 S. Eastern Ave., Moore, OK 73160
(405) 691-3777 or Fax (405) 912-8808

PAT. NO. 102771
10525 S. Eastern Rd. Oklahoma City, OK 73165

CHAIN OF CUSTODY

Project Name and Number:

Engineering & Planning Dept. & City Hall "Police Dept."

Project Location:

222 N Broadway, Shawnee, OK 74801

Contact:

DAVID SCHWABART

PHONE NO.:

405-691-3122

Preservation Requirements:

24 TAT

Sample Number	Sample Media	Analysis Requested	Comments
A-01	Allergen Trap	mold	C.I.D. - Criminal Investigation Dept. - City Hall "75 Liters"
		mold	
		mold	
A-02	Allergen Trap	mold	C.I.D. - Hallway "75 Liters"
A-03	Allergen Trap	mold	Police Dept. - District office "75 Liters"
A-04	Allergen Trap	mold	Engineering & Planning Dept. Receptionist office "75 Liters"
A-05	Allergen Trap	mold	Engineering & Planning Dept. MAINT hallway rooming EAST WING "75 Liters"
A-06	Allergen Trap	mold	Outside "75 Liters"
T-01	BIO-TAP	mold	Criminal Investigation Dept. Detective Office - 1000 Corner

Sampled By:

TAT

Date:

5-16-07

Delivered By:

[Signature]

Date:

5-16-07 Time: 4:50

Received By:

[Signature]

Date:

5-16-07 Time: 4:50

Company:

Delivered By:

Date:

Time:

Received By:

Date:

Time:

Company:

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2039 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Microbiology Analytical Report

QuanTEM Lab ID: 149666 **Client:** Air & Earth, Inc.
Date Received: 05/16/2007 **Address:** 18025 S. Sooner Rd.
Received By: Teresa DeJurett **City:** Oklahoma City, OK 73165
Analyzed By: Todd Jelinek
Date Analyzed: 05/17/2007 **Account Number:** A431
Methodology: Allergenco-D, Quantitative **Project:** Planning Dept & City Hall (Police Dept)
Non-Culturable MIM001 **Location:** 222 N. Broadway, Shawnee, OK 74801
AJHA ID Number: 101352 **Project No:** N/A

QuanTEM Sample ID	001	002	003	004	005	006
Client Sample ID	A-01	A-02	A-03	A-04	A-05	A-06
Volume (L)	75	75	75	75	75	75
Detection Limit (Counts/m ²)	13	13	13	13	13	13

	Results Counts/m ²	Results Counts/m ²	Results Counts/m ²	Results Counts/m ²	Results Counts/m ²	Results Counts/m ²
<i>Alternaria</i>	13	27	27		13	40
Amerisporus (1)		13				13
Ascosporus	80	120	107	40	400	1498
<i>Aspergillus/Penicillium Group</i>					40	
Basidiospores			13		13	67
<i>Bipolaris/Drechslera Group (2)</i>	13	40	27	27	13	13
<i>Ceraospora</i>					13	53
<i>Cladophorium</i>	131	53	80	37	107	520
<i>Epicoccum</i>						13
Fungal Fragments	27	27	40	13	53	107
Moldsw						13
<i>Periconia/Myrmogaster/Smutz</i>	27	80	93	53		53
<i>Pithomyces/Ulicium</i>		13				
Pollen	13	27	13			120
<i>Rhiziz</i>						13
Total Results (Counts/m²)	306	400	400	160	652	2518
Percent Coverage (%)	35	40	35	25	10	40
Comments:						

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

Approved: _____

Todd Jelinek
 Todd Jelinek, Analyst

(1) Small, single-celled, unidentifiable mold spores (2) Also includes spores from Epicoccium, Epicoccium and Halimothecium
 Percent coverage = amount of particulate matter. With 25-50% coverage, results may be underestimated; with 50-70% coverage, results will be underestimated; with >70% coverage, slides are designated overloaded (too dirty to count).
 The results taken from your home, building, etc. cannot be interpreted without physical inspection of the contaminated area or without considering the building's characteristics and the factors that led to the present condition. Interpretation of results is the responsibility of the company or individual who conducted the investigation.
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2822 Heritage Park Drive / Oklahoma City, OK 73120 / (405) 755-7272 / Fax (405) 755-2058

Microbiology Analytical Report

QUANTEM Lab ID: 149666 **Client:** Air & Earth, Inc.
Date Received: 05/16/2007 **Address:** 10025 S. Sooner Rd.
Received By: Teresa DeJarnett **City:** Oklahoma City, OK 73165
Analyzed By: Todd Jelinek
Date Analyzed: 05/17/2007 **Account Number:** A431
Methodology: Tape, Qualitative NonCulturable **Project:** Planning Dept & City Hall (Police Dept.)
MM002 **Location:** 222 N. Broadway, Shawnee, OK 74801
AHIA ID Number: 101352 **Project No:** N/A

QUANTEM Sample ID	007					
Client Sample ID	T-01					

	Results	Results	Results	Results	Results	Results
<i>Alternaria</i>	Abundant					
<i>Dipolaris/Draufistera Group (2)</i>	Moderate					
<i>Epizocarium</i>	Abundant					
<i>Pollen</i>	Few					
Comments:						

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

Approved: Todd Jelinek
Todd Jelinek, Analyst

(2) Also includes spores from Exosporium, Basorhizium and Holminthosporium
 Few=10 or fewer fungal structures detected over area analyzed; Abundant=fungal structures detected in 75% or more of the area analyzed or more than 500 fungal structures present; Moderate=fungal structure concentrations between few & abundant.
 The results taken from your home, building, etc. cannot be interpreted without physical inspection of the contaminated area or without considering the building's characteristics and the factors that led to the present condition. Interpretation of results is the responsibility of the company or individual who conducted the investigation.
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