



- Electronic, HEPA and Portable Air Cleaners
- Air Filtration and Ventilation Systems
- Indoor Air Quality Testing
- Air Duct Cleaning



July 18, 1997

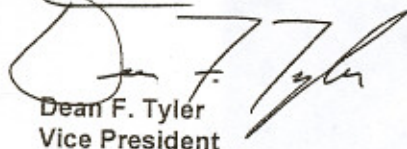
Julie House
914 East 76th Terrace
Kansas City, MO 64131

Dear Ms. House:

Please find the enclosed air testing results. The "after remediation" results were sampled after air duct and system cleaning and installation of an ASHRAE 65 cell and Sanuvox R100C Next Generation Air Purifier. The results are excellent: mold levels dropped 100%; pollen levels dropped 100%; skin cell levels dropped 99%; cellulosic levels dropped 99%; opaque particles dropped 99%; airborne particle levels .5 to 5 microns exiting air supply registers dropped 75%; and volatile organic chemical levels dropped 50%.

Thank you again for your patronage. Please let me know if you have any questions or if I can be of any service.

Very truly yours,

A handwritten signature in dark ink, appearing to read "D. F. Tyler", is written over a large, stylized graphic element that resembles a signature or a logo.

Dean F. Tyler
Vice President

HOUSE ENVIRONMENTAL TESTING EVALUATION¹

AEROSOL SAMPLING

An air sample was taken using a high volume air sampling pump. The impaction spore trap sampling and direct microscopic analysis method employed is commonly used for environmental evaluation of airborne aero-allergens (mold, pollen, insect parts, etc.)

Supply Sample Total Mold Spores (Cts/m³):		4,020 Cts/m³
Alternaria:	196 Cts/m ³	
Aspergillus/Penicillium:	98 Cts/m ³	
Ascospores:	294 Cts/m ³	
Basidiospore:	588 Cts/m ³	
Cladosporium:	1,961 Cts/m ³	
Other Hyaline Fungi:	294 Cts/m ³	
Unidentified Fungi:	588 Cts/m ³	

After Remediation Supply Air Sample Total Mold Spores (Cts/m³):		None Detected
Alternaria:	None detected	
Aspergillus/Penicillium:	None detected	
Ascospores:	None detected	
Basidiospore:	None detected	
Chaetomium:	None detected	
Cladosporium:	None detected	
Dreschelera/bipolaris:	None detected	
Smuts/Myxomycetes:	None detected	
Other Hyaline Fungi:	None detected	
Unidentified Fungi:	None detected	
Hyphae Fragments:	None detected	

"Clean" buildings will have a total mold spore count below 2,000 Cts/m³. If indoor amplification of mold is present Penicillium, Aspergillus, and Cladosporium levels will be between 5,000-10,000 Cts/m³.

Supply Air Sample for Total Pollen Cts/m³:	60 Cts/m³
After Remediation Supply Air Sample for Total Pollen Cts/m³:	None detected

Individuals with pollen allergies may begin to exhibit symptoms when airborne concentrations exceed approximately 50 Cts/m³.

¹Results from air testing are influenced by a number of factors--i.e., activities, outdoor conditions, air infiltration, etc. The results from air testing are accurate for the time of the tests. Findings from the analysis of the results pertain only to physical characteristics of the indoor environment and do not offer any information relating to occupant health.

Other Aerosols

Supply Air Sample Skin Cell Fragments:	<i>38,235 Cts/m³</i>
After Remediation Supply Air Sample Skin Cell Fragments:	<i>68 Cts/m³</i>

The skin cell fragment category includes skin cell fragment concentrations > 20.00 microns in diameter. Although no direct health effects can be diagnosed by their measurement, skin cell fragment concentrations are a good combined surrogate indicator of effective fresh air transfer rates, occupant density, commensal bacteria potential, general janitorial effectiveness, and filtration of recirculated air in the building. Typical concentrations for a "clean" building are 500-10,000 Cts/m³.

Supply Air Sample for Fiberglass:	<i>None detected</i>
After Remediation Supply Air Sample for Fiberglass:	<i>None detected</i>

Fiberglass exceeding 500 Cts/m³ are an indicator of active fiber shedding and reintrainment of fibers.

Supply Air Sample for Cellulosic Fibers:	<i>5,480 Cts/m³</i>
After Remediation Supply Air Sample for Cellulosic Fibers:	<i>27 Cts/m³</i>

Fiber sources include architectural finishes, paper products, clothing, and carpeting. These fibers are typically found in airborne concentrations ranging from 100 to 1,000 Cts/m³.

Supply Air Sample Opaque Particles:	<i>23,529 Cts/m³</i>
After Remediation Supply Air Sample Opaque Particles:	<i>34 Cts/m³</i>

The opaque particle category encompasses a range of unrelated optically opaque particles including combustion emissions (primarily diesel), paint and binders from degrading sound liners in HVAC systems, organic debris and rust from HVAC drip pans, rubber tire particles, copier and printer toner, insect droppings, and other organic detritus. This category of particle does not normally occur in concentrations exceeding approximately 4,000 Cts/m³ in "clean" indoor environments.

PARTICLE COUNTS

Particle counts with a laser particle counter accurately measure the total concentration of airborne particles in a cubic foot of air. Samples will determine average room particle levels, levels of particles entering and existing the duct system, and furnace filtration performance. High particle counts have been associated with upper respiratory track (URT) irritation, coughing, wheezing, sneezing, headaches, and sinus problems.

Qualitative Scale:

High:	200,000 and above
Medium:	100,000 to 200,000
Low:	100,000 and below

Average with HVAC system off:	<i>330,133</i>
Supply Average:	<i>321,666</i>
Return Average:	<i>301,200</i>

After Remediation Average with HVAC system off:
After Remediation Supply Average:
After Remediation Return Average:

130,100
78,123
128,166

VOLATILE ORGANIC CHEMICALS

Volatile organic chemicals (VOCs) are an important class of indoor contaminants. Their sources are modern materials and activities, such as glues, resins, insulations, carpeting, and cleaners. Adverse health effects of VOCs include mucous membrane irritation, headaches, and neuropsychological dysfunctions.

Qualitative Scale:

High: 1,200 and above
Medium: 800 to 1,200
Low: 800 and below

Indoor TVOC Average*: 1,612
After Remediation Indoor TVOC Average: 813

FUNGAL COLONY FORMING UNITS

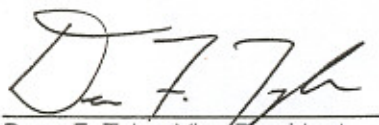
Samples from air entering and exiting the heating/cooling system are taken to identify fungal concentrations in building environment and duct system.

Qualitative Scale:

High: 11 CFUs and above
Medium: 6 CFUs to 10 CFUs
Low: 5 CFUs and below

Supply mold and fungal levels: 44 CFUs
Return mold and fungal levels: 27 CFUs

After Remediation Supply mold and fungal levels: 2 CFUs
After Remediation Return mold and fungal levels: 10 CFUs



Dean F. Tyler, Vice President
Air Care Technologies, Inc.