



Aladdin Environmental LLC

321 W. Josephine * San Antonio, TX 78212 * 210-736-1826x218 * Fax 210-732-3667
John Spalten – Texas Mold Assessment Consultant MAC0383

February 18, 2008

San Antonio Housing Authority
Attn: Mr. Neville Blair
818 South Flores St.
San Antonio, TX 78204

Re: Apartments 105, 107, 108, 109, 110, 111, 112, 113, 116, 117, 118, 119, 120, 121 and 122, Blanco Apts., 906 W. Huisache, San Antonio, TX

Dear Neville:

1.0. Aladdin Environmental conducted an environmental evaluation of the referenced property on February 13th, 2008. John Spalten, Mold Assessment Consultant, Texas License Number 0383 conducted the evaluation. The objective of this limited survey was to locate and collect samples of air, submit the samples for laboratory analysis and provide a written report of findings and recommendations. We have observed the standard of care generally exercised by the profession under similar circumstances and conditions to complete this report. Based on observations there is evidence to suggest mold proliferation in the various apartments. The following comments and recommendations are based on the laboratory results and visual inspection of the apartments. This coupled with the comparison of the outdoor sample with the indoor samples serve as a basis for evaluating the general environmental conditions. The indoor air quality evaluation observations and testing results detailed in this report are for a single sampling episode. Any changes in ambient conditions may have an effect on future conditions. Moisture control is the key to controlling the growth of mold.

2.0. Conclusions and Recommendations:

2.0.1. GENERAL. The outside air sample is taken for comparison (sample A-Out and A-Out2) with the inside samples (A-105 through A-122). Swab samples were taken on the top side of the kitchen ceilings (S-105 through S-122). All apartments had visible damage to each of the ceilings of the kitchens in each apartment. The damage observed was peeling paint and cracks. This could be caused by excessive moisture or humidity in the apartments. Recommend repairing the air conditioning units in each apartment to stop the production of water. It should be noted that the species *Stachybotrys* was found in the air samples of 105, 112, 113, 118, 120 and 122. *Stachybotrys* was also found in the swab sample in apartments (110, 111, 112, 113, 116, 117, 119, 120, 121 & 122). This species was not found in the outdoor sample at the time the sample was taken.

2.0.2 Apartment #105, Sample A-105 and S-105.

Lab results of the air sample show elevated counts of spores found outside along with highly elevated counts of *Aspergillus/Penicillium* and the presence of *Stachybotrys*. Lab results of the swab sample indicate the presence of *Chaetomium* and *Aspergillus/Penicillium* in the apartment. This suggests there may be a source within the apartment promoting the growth of this species. This could be attributed to the existing evidence of water damage and microbial growth. Further observation showed the air conditioning unit was leaking or the warm air return from the apartment was passing over the inadequately insulated air conditioning pipes. The condensation produced would also explain the water at the air conditioner base. This water is being wicked into the sheetrock thus providing the moisture required to support microbial growth.

2.0.3. Apartment #107, Sample A-107 and S-107.

Lab results of the air sample show similar counts of spores found outside and highly elevated counts of *Aspergillus/Penicillium*. Lab results of the swab sample indicate rare amounts of two types of spores. This suggests there may be a source within the apartment promoting the growth of this species. This could be attributed to the existing evidence of water damage and microbial growth. Further observation showed the air conditioning unit was leaking or the warm air return from the apartment was passing over the inadequately insulated air conditioning pipes. The condensation produced would also explain the water at the air conditioner base. This water is being wicked into the sheetrock thus providing the moisture required to support microbial growth.

2.0.4. Apartment #108, Sample A-108 and S-108.

Lab results of the air sample show similar counts of spores found outside along with highly elevated counts of *Aspergillus/Penicillium*. Lab results of the swab sample indicate low & rare amounts of two types of spores. This suggests there may be a source within the apartment promoting the growth of this species. This could be attributed to the existing evidence of water damage and microbial growth. Further observation showed the air conditioning unit was leaking or the warm air return from the apartment was passing over the inadequately insulated air conditioning pipes. The condensation produced would also explain the water at the air conditioner base. This water is being wicked into the sheetrock thus providing the moisture required to support microbial growth.

2.0.5. Apartment #109, Sample A-109 and S-109.

Lab results of the air sample show similar counts of spores found outside, or within a reasonable amount. Lab results of the swab sample did **not** indicate the presence of mold in the sample. Please see the comment section for observations.

2.0.6. Apartment #110, Sample A-110 and S-110.

Lab results of the air sample show similar counts of spores found outside, or within a reasonable amount. Lab results of the swab sample indicate the presence of *Stachybotrys* and *Chaetomium* in the apartment. This suggests there may be a source within the apartment promoting the growth of this species. This could be attributed to the existing evidence of water damage and microbial growth. Further observation showed the air conditioning unit was leaking or the warm air return from the apartment was passing over the inadequately insulated air conditioning pipes. The condensation produced would also explain the water at the air conditioner base. This water is being wicked into the sheetrock thus providing the moisture required to support microbial growth.

2.0.7. Apartment #111, Sample A-111 and S-111.

Lab results of the air sample show similar counts of spores found outside. Lab results of the swab sample indicate the presence of *Stachybotrys* in the apartment. This suggests there may be a source within the apartment promoting the growth of this species. This could be attributed to the existing evidence of water damage and microbial growth. Further observation showed the air conditioning unit was leaking or the warm air return from the apartment was passing over the inadequately insulated air conditioning pipes. The condensation produced would also explain the water at the air conditioner base. This water is being wicked into the sheetrock thus providing the moisture required to support microbial growth.

2.0.8. Apartment #112, Sample A-112 and S-112.

Lab results of the air sample show similar counts of spores found outside along with highly elevated counts of *Aspergillus/Penicillium* and the presence of *Stachybotrys* and *Chaetomium*. Lab results of the swab sample indicate the presence of *Stachybotrys* and *Aspergillus/Penicillium* in the apartment. This suggests there may be a source within the apartment promoting the growth of this species. This could be attributed to the existing evidence of water damage and microbial growth. Further observation showed the air conditioning unit was leaking or the warm air return from the apartment was passing over the inadequately insulated air conditioning pipes. The condensation produced would also explain the water at the air conditioner base. This water is being wicked into the sheetrock thus providing the moisture required to support microbial growth.

2.0.9. Apartment #113, Sample A-113 and S-113.

Lab results of the air sample show similar counts of spores found outside along with highly elevated counts of *Aspergillus/Penicillium* and the presence of *Stachybotrys*. Lab results of the swab sample indicate the presence of *Stachybotrys* and *Chaetomium* in the apartment. This suggests there may be a source within the apartment promoting the growth of this species. This could be attributed to the existing evidence of water damage and microbial growth. Further observation showed the air conditioning unit was leaking or the warm

air return from the apartment was passing over the inadequately insulated air conditioning pipes. The condensation produced would also explain the water at the air conditioner base. This water is being wicked into the sheetrock thus providing the moisture required to support microbial growth.

2.0.10. Apartment #116, Sample A-116 and S-116.

Lab results of the air sample show similar counts of spores found outside along with highly elevated counts of *Aspergillus/Penicillium*. Lab results of the swab sample indicate the presence of *Stachybotrys* in the apartment. This suggests there may be a source within the apartment promoting the growth of this species. This could be attributed to the existing evidence of water damage and microbial growth. Further observation showed the air conditioning unit was leaking or the warm air return from the apartment was passing over the inadequately insulated air conditioning pipes. The condensation produced would also explain the water at the air conditioner base. This water is being wicked into the sheetrock thus providing the moisture required to support microbial growth.

2.0.11. Apartment #117, Sample A-117 and S-117.

Lab results of the air sample show similar counts of spores found outside along with elevated counts of *Aspergillus/Penicillium*. Lab results of the swab sample indicate the presence of *Stachybotrys* and *Chaetomium* in the apartment. This suggests there may be a source within the apartment promoting the growth of this species. This could be attributed to the existing evidence of water damage and microbial growth. Further observation showed the air conditioning unit was leaking or the warm air return from the apartment was passing over the inadequately insulated air conditioning pipes. The condensation produced would also explain the water at the air conditioner base. This water is being wicked into the sheetrock thus providing the moisture required to support microbial growth.

2.0.12. Apartment #118, Sample A-118 and S-118.

Lab results of the air sample show similar counts of spores found outside along with highly elevated counts of *Aspergillus/Penicillium* and the presence of *Stachybotrys* and *Chaetomium*. Lab results of the swab sample indicate the presence of *Chaetomium* in the apartment. This suggests there may be a source within the apartment promoting the growth of this species. This could be attributed to the existing evidence of water damage and microbial growth. Further observation showed the air conditioning unit was leaking or the warm air return from the apartment was passing over the inadequately insulated air conditioning pipes. The condensation produced would also explain the water at the air conditioner base. This water is being wicked into the sheetrock thus providing the moisture required to support microbial growth.

2.0.13. Apartment #119, Sample A-119 and S-119.

Lab results of the air sample show similar counts of spores found outside along with elevated counts of *Aspergillus/Penicillium*. Lab results of the swab sample indicate the presence of *Stachybotrys* in the apartment. This suggests there may be a source within the apartment promoting the growth of this species. This could be attributed to the existing evidence of water damage and microbial growth. Further observation showed the air conditioning unit was leaking or the warm air return from the apartment was passing over the inadequately insulated air conditioning pipes. The condensation produced would also explain the water at the air conditioner base. This water is being wicked into the sheetrock thus providing the moisture required to support microbial growth.

2.0.14. Apartment #120, Sample A-120 and S-120.

Lab results of the air sample show similar counts of spores found outside along with slightly elevated counts of *Aspergillus/Penicillium*. Lab results of the swab sample indicate the presence of *Stachybotrys* in the apartment. This suggests there may be a source within the apartment promoting the growth of this species. This could be attributed to the existing evidence of water damage and microbial growth. Further observation showed the air conditioning unit was leaking or the warm air return from the apartment was passing over the inadequately insulated air conditioning pipes. The condensation produced would also explain the water at the air conditioner base. This water is being wicked into the sheetrock thus providing the moisture required to support microbial growth.

2.0.15. Apartment #121, Sample A-121 and S-121.

Lab results of the air sample show similar counts of spores found outside along with slightly elevated counts of *Aspergillus/Penicillium*. Lab results of the swab sample indicate the presence of *Stachybotrys* in the apartment. This suggests there may be a source within the apartment promoting the growth of this species. This could be attributed to the existing evidence of water damage and microbial growth. Further observation showed the air conditioning unit was leaking or the warm air return from the apartment was passing over the inadequately insulated air conditioning pipes. The condensation produced would also explain the water at the

air conditioner base. This water is being wicked into the sheetrock thus providing the moisture required to support microbial growth.

2.0.16. Apartment #122, Sample A-122 and S-122.

Lab results of the air sample show similar counts of spores found outside along with the presence of *Stachybotrys*. Lab results of the swab sample indicate the presence of *Stachybotrys* and *Chaetomium* in the apartment. This suggests there may be a source within the apartment promoting the growth of this species. This could be attributed to the existing evidence of water damage and microbial growth. Further observation showed the air conditioning unit was leaking or the warm air return from the apartment was passing over the inadequately insulated air conditioning pipes. The condensation produced would also explain the water at the air conditioner base. This water is being wicked into the sheetrock thus providing the moisture required to support microbial growth.

2.0.17. General information regarding the species *Aspergillus*. This species is a common type I & III allergen. They are frequently isolated from forest products, soils, grains, nuts, cotton, organic debris and water damaged building materials. Spores can also be found in moist ventilation systems and house dust. *Penicillium* sp. – (Aw 0.78). A wide number of organisms belong to this genus. Identification to species is difficult. Often found in aerosol samples. Commonly found in soil, food, cellulose, paint, grains and compost piles. It is commonly found in carpet, wallpaper and in interior fiberglass duct insulation. Although this fungus is less allergy-provoking than the other molds, *Penicillium* is reported to be allergenic (skin) and it may cause hypersensitivity pneumonitis and allergic alveolitis in susceptible individuals.

Sincerely,

John Spalten
MAC0383

Enc: Lab Report

Analyses of the laboratory samples taken along with observations and/or suggestions are as follows:

Air Samples

A-Out – Outside

- Sample taken for comparison.

A-105 – Apartment #105

- Lab results show elevated counts of *Aspergillus/Penicillium* when compared to outside along with *Stachbotrys* which was **not** present in the outdoor sample. These counts are considered elevated and actions should be taken.

A-107 – Apartment #107

- Lab results show highly elevated counts of *Aspergillus/Penicillium* when compared to the outside sample along with similar counts of spores found outside. These counts are considered elevated and actions should be taken.

A-108 – Apartment #108

- Lab results show highly elevated counts of *Aspergillus/Penicillium* when compared to the outside sample along with similar counts of spores found outside. These counts are considered elevated and actions should be taken.

A-109 – Apartment #109

- Lab results show similar counts of spores found outside, or within a reasonable amount. These counts are considered within generally accepted guidelines.

A-110 – Apartment #110

- Lab results show similar counts of spores found outside, or within a reasonable amount. Please see “swab sample” results below.

A-111 – Apartment #111

- Lab results show similar counts of spores found outside, or within a reasonable amount. Please see “swab sample” results below.

A-112 – Apartment #112

- Lab results show elevated counts of *Aspergillus/Penicillium* when compared to outside along with *Stachbotrys* which was **not** present in the outdoor sample. These counts are considered elevated and actions should be taken.

A-113 – Apartment #113

- Lab results show elevated counts of *Aspergillus/Penicillium* when compared to outside along with *Stachbotrys* which was **not** present in the outdoor sample. These counts are considered elevated and actions should be taken.

A-Out2- Outside

- Additional sample taken outside for comparison.

A-116 – Apartment #116

- Lab results show highly elevated counts of *Aspergillus/Penicillium* when compared to the outside sample along with similar counts of spores found outside. Please see “swab sample” results below.

A-117 – Apartment #117

- Lab results show elevated counts of *Aspergillus/Penicillium* when compared to the outside sample along with similar counts of spores found outside. Please see “swab sample” results below.

A-118 – Apartment #118

- Lab results show highly elevated counts of *Aspergillus/Penicillium* when compared to outside along with *Stachbotrys* which was **not** present in the outdoor sample. These counts are considered elevated and actions should be taken.

A-119 – Apartment #119

- Lab results show elevated counts of *Aspergillus/Penicillium* when compared to the outside sample along with similar counts of spores found outside. Please see “swab sample” results below.

A-120 – Apartment #120

- Lab results show elevated counts of *Aspergillus/Penicillium* when compared to outside along with *Stachbotrys* which was **not** present in the outdoor sample. These counts are considered elevated and actions should be taken.

A-121 – Apartment #121

- Lab results show elevated counts of *Aspergillus/Penicillium* when compared to the outside sample along with similar counts of spores found outside. Please see “swab sample” results below.

A-122 – Apartment #122

- Lab results show similar counts of spores found outside, or within a reasonable amount, along with *Stachbotrys* which was **not** present in the outdoor sample. These counts are considered elevated and actions should be taken.

Swab Samples

S-105 – Apartment #105

- Lab results indicate the presence of *Aspergillus/Penicillium* and *Chaetomium*. Actions should be taken immediately.

S-107 – Apartment #107

- Lab results of the swab sample indicate rare amounts of two types of spores.

S-108 – Apartment #108

- Lab results of the swab sample indicate low & rare amounts of two types of spores.

S-109 – Apartment #109

- Lab results did **not** indicate the presence of mold spores in the sample taken.

S-110 – Apartment #110

- Lab results indicate the presence of *Stachybotrys* and *Chaetomium*. Actions should be taken immediately.

S-111 – Apartment #111

- Lab results indicate the presence of *Stachybotrys*. Actions should be taken immediately.

S-112 – Apartment #112

- Lab results indicate the presence of *Stachybotrys*. Actions should be taken immediately.

S-113 – Apartment #113

- Lab results indicate the presence of *Stachybotrys* and *Chaetomium*. Actions should be taken immediately.

S-116 – Apartment #116

- Lab results indicate the presence of *Stachybotrys*. Actions should be taken immediately.

S-117 – Apartment #117

- Lab results indicate the presence of *Stachybotrys* and *Chaetomium*. Actions should be taken immediately.

S-118 – Apartment #118

- Lab results indicate the presence of *Chaetomium*. Actions should be taken immediately.

S-119 – Apartment #119

- Lab results indicate the presence of *Stachybotrys*. Actions should be taken immediately.

S-120 – Apartment #120

- Lab results indicate the presence of *Stachybotrys*. Actions should be taken immediately.

S-121 – Apartment #121

- Lab results indicate the presence of *Stachybotrys*. Actions should be taken immediately.

S-122 – Apartment #122

- Lab results indicate the presence of *Stachybotrys* and *Chaetomium*. Actions should be taken immediately.

General Recommendations and/or Observations

- Inspected areas in each Apartment. The A/C system in each apartment has serious moisture and condensation issues and needs to be addressed immediately. The shower in each apartment also shows damage to the sheetrock adjacent to the shower opening.
- **Recommend** – HVAC systems in each apartment need to be addressed to prevent water leaking from the condensate line as well as condensation dripping onto the sheetrock ceiling. The shower areas need to be addressed to prevent water from repeatedly getting the sheetrock wet.

Aspergillus is a common type I & III allergen. They are frequently isolated from forest products, soils, grains, nuts, cotton, organic debris, and water damaged building materials. Spores can also be found in moist ventilation systems and house dust. *Penicillium sp.* - (Aw 0.78). A wide number of organisms belong to this genus. Identification to species is difficult. Often found in aerosol samples. Commonly found in soil, food, cellulose, paint, grains, and compost piles. It is commonly found in carpet, wallpaper, and in interior fiberglass duct insulation. Although this fungus is less allergy-provoking than the other molds, *Penicillium* is reported to be allergenic (skin) and it may cause hypersensitivity pneumonitis and allergic alveolitis in susceptible individuals.

Chaetomium is found worldwide on a variety of substrates including paper, damp sheetrock, carpet, plant compost, soil, and between layers of wet plywood. Several species have been reported to play a major role in decomposition of cellulose-based materials, and is often found indoors with *Stachybotrys*. These fungi are able to dissolve the cellulose fibers in cotton and paper and thus cause the materials to disintegrate. The process is especially rapid under moist conditions. *Chaetomium* is reported to have type I & III allergens, and can produce sterigmatocystin, a mycotoxin shown to cause kidney and liver damage in laboratory animals. It is not a common human pathogen, but it has been known to cause skin and nail infections.

Stachybotrys is commonly found in sub-tropical to tropical areas in soil and decaying plant materials, and is considered a type I & III allergen. Considerable recent media attention has been focused on the fungi *Stachybotrys chartarum (atra)* due to infant deaths in Cleveland from pulmonary hemosiderosis, which may be associated with contamination of residences with this fungus. *Stachybotrys* thrives on water damaged cellulose rich materials such as sheet rock, paper, ceiling tiles, cellulose containing insulation backing and wallpaper. The presence of this fungus in buildings is significant because of the mold's ability to produce mycotoxins, such as Satratoxin H, Trichoverrol, and Cyclosporins that possess cytotoxic, immunological, carcinogenic effects. Exposure to these toxins can occur through inhalation, ingestion or dermal exposure.