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An Evaluation of Mold in Public Schools in the City of Richmond, VA

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AN EVALUATION OF MOLD IN PUBLIC SCHOOLS IN THE CITY OF RICHMOND, VIRGINIA

A Thesis submitted in partial fulfillment of the requirements for the degree of Master of Science, Environmental Studies at Virginia Commonwealth University.

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Abstract

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An attempt is made in this dissertation to evaluate the impact of mold in the City of Richmond Public Schools in Virginia.

Forty-three (43) schools in the City of Richmond were used for this study. The rooms in these schools that were selected for testing were those rooms in which complaints about air quality were made by school staff. Tests were done to find out the counts of the different mold species present in these schools. Air-O-Cell (AOC) samples were taken in all schools, swab samples were taken in a few and in the rest biotapes were used. Samples that were taken were analyzed and interpreted at AmeriSci Laboratories,

an accredited industrial hygiene laboratory. Documentation was done for the sampling methods. Statistical analysis was run on the data received. Tables of results were made, discussions done and conclusions drawn from the laboratory results.

The null hypothesis for this study is that "Total inside mold counts are not elevated above the total outside mold counts in Richmond Public Schools" and the alternative hypothesis is that "Total inside mold counts are elevated above the total outside mold counts in Richmond Public Schools". Biodiversity of molds in the indoor environment should be equal to biodiversity of molds in the outdoor environment for each of the classrooms sampled. Also, Total indoor mold counts exceeding 1000 counts/m3 means that particular school could be faced with a mold problem. In conclusion, it was found out that 58% of the schools sampled could be faced with mold problems, thereby rejecting the null hypothesis, and 42% had no mold problems at all, supporting the null hypothesis. *Cladosporium* was the most dominant mold genus in the schools and the school with the highest total count of molds in the rooms sampled was Maggie Walker School. Recommendations were then made to reduce the abundance of molds in Richmond Public Schools.

INTRODUCTION

A RATIONALE FOR THIS STUDY

Indoor air quality has been a controversial issue in almost all schools in the United States. Public schools in Richmond, Virginia are no exception to this frequent occurrence. Air quality problems have been known to affect both teachers and students. Over the years, occupants of Richmond public schools have lodged complaints relating diseases such as asthmatic attacks, headaches, nasal congestions, eye and skin irritations, coughing, sneezing and fatigue, dizziness and nausea and several other respiratory tract infections and diseases to air quality. The Richmond City School Board has worked with the Virginia Commonwealth University (VCU) School of Medicine staff and students for many years to survey air quality in the schools under their jurisdiction. Recently, the focus has been on monitoring the current status of mold in these schools.

In September 2003, the School Board contracted with VCU to perform mold evaluations in various schools over the course of the 2003-04 and 2004-05 school years. This sampling project was executed by Sofia Shamas, a Masters student in Biomedical Engineering, Surekha Kanithi, a Masters student also in Biomedical Engineering and Kellie Mayfield, a Masters student in Environmental Sciences, all at VCU. Dr. R. Leonard Vance, an Associate Professor in the Department of Epidemiology and Community Health at VCU, supervised this project. An attempt was made to sample fifty-five (55) schools. Forty-three (43) schools were actually tested, the rest were not

sampled, some because of adverse weather conditions, some because of cancelled appointments and some for various other reasons. For the sake of this study, I will be concentrating on the 43 schools, for which data are available for analysis.

This study is very important. Data now exist for these schools and the statistical analysis presented in this study will attempt to investigate and find out what is actually going on in these schools and what these figures really mean. Mold is part of our natural environment and because of this, there should be continuous and periodic testing and evaluations to assess regularly the status of air quality in schools. Continuous monitoring is the best way to prevent mold growth and this study will be a continuation of the good work started by my predecessors. The recommendations that emerge out of this study will go a long way to alleviate the diseases reported by teachers and students alike. Also, exposure to lawsuits and liability would be reduced. Money spent on mold cleanups could be diverted into more fruitful and profitable ventures to help improve our school system. Last but not least, overall productivity would be increased tremendously.

OBJECTIVES

The main objective for this study is to take these schools, individually, and find out whether mold is a problem or not. This analysis would be based on comparisons between indoor and outdoor environments, with the outdoor serving as the control for this study. The schools will be ranked from the highest to the lowest, in terms of the total mold counts, in the indoor environment so that the School Board would be able to prioritize their mold remediation activities based on sound, realistic statistical evidence.

Thirdly, emphasis would be placed on investigating and finding out which of the mold genera is most prevalent in this particular area. With this in mind, a lot of emphasis can be placed on this particular genus, in terms of its life cycle and how best to curtail its future dominance. Recommendations would then be made to bring the mold situation in these schools to the barest minimum levels. This would set the platform for future research into mold. The software packages Excel and SAS (version 8.2) would be used for all the statistical analysis relating to this study.

LITERATURE REVIEW

MOLD BACKGROUND INFORMATION

Molds are part of the natural environment. Molds live in the soil, on plants, and on dead or decaying matter. They play a key role in the breakdown of leaves, wood and other plant debris. Molds belong to the kingdom Fungi. Unlike plants, molds lack the ability to produce their own food because of the absence of chlorophyll in their tissues. Molds survive by digesting plant materials, using plant and other organic material as food. (EPA, 2001). They can grow on virtually any organic substance, as long as moisture and oxygen are present. Excessive accumulation of moisture in buildings or on building materials will cause mold growth to occur, particularly if the moisture problem remains undiscovered or unaddressed. (Lstiburek, 1999). Although the presence of molds causes a lot of health issues, they can also have some useful attributes associated to them. Without molds, our environment would be overwhelmed with large amounts of dead organic matter. It is also very essential in the production of antibiotics and some foods, such as cheese.

There are over 100,000 genera of molds in existence on the face of the earth, some more harmful than others. Some of the common indoor molds are *Cladosporium, Penicillium, Aspergillus, Basidiospores, Alternaria, Stachybotrys and Fusarium.* Different mold genera can have varying health effects, but it is important to

remember that any excessive growth of mold needs to be taken very seriously irrespective of the genus of mold.

LIFE CYCLE OF MOLDS

The life cycles of fungi, of which molds form a part, can proceed in several different patterns. Most indoor molds are considered to go through a four-stage life cycle: spores, germs, hypha and the mature mycelium. The developmental stages of a mold using alternative diagrams revealed the same cycle pattern. (Brundrett, 1990).

Molds reproduce by means of spores, microscopic organisms, which vary in shape and size, ranging from 2 to 10 micrometers. The mold spores travel in several directions. They may be passively moved by a breeze or water drop, mechanical disturbance by a person or animal passing by, or actively discharged by the mold, usually under moist conditions or high humidity. Through spore liberation (the process of detachment of spore from spore-bearing structure) and spore dispersal (the subsequent movement of the spore before settling on a material surface), individual mold life cycles are initiated. Concentrations of spores in outdoor and indoor air have been the target for much research. (Ingold, 1971 and Darrell, 1974). When conditions are favorable, the spores start the growth process. The spores then go through a four-stage developmental process: maturation, dormancy, activation and germination. (Burnett, 1976). The combined process is usually referred to as germination. Once activated and germinated, the resulting germ tube is ready to grow into the hyphae, then a cluster mycelium under favorable conditions. In this (vegetative) growth stage, molds produce and extend microscopic, cylindrical filaments, the thread-like cellular strands called hyphae, into the

food sources (material). These hyphae produce and excrete digestive enzymes in the food and take up nutrients in watery form and transport them to the growing hyphal tips. The hyphae grow by extending themselves on the tip or by branching out new threads at the tip and in the older parts. The total quantities of hyphae produced by a fungus are collectively termed as a mycelium. The mycelium grows into the material (substrate), consumes its organic components in the process, weakens the structure of the material and eventually destroys the structure and renders the material incapable of fulfilling its function. A typical example is *Aspergillus*, which is very difficult to avoid. Indoor dust contains spores, and thermo-tolerant molds may colonize damp or water damaged building materials or components. (Horner, 2005). The only way to observe a mold spore is under a microscope. The indoor and outdoor environments are continually infused with mold spores. When mold spores land on a damp spot indoor, they may begin growing and digesting whatever they are growing on in order to survive.

CAUSES OF MOLD GROWTH

There are a number of conditions conducive to mold growth. These are moisture, oxygen, appropriate temperature conditions, a food source and the presence of spores in order to grow. Since it is often difficult to control the presence of oxygen, spores, or a food source, moisture is the only condition we can control.

It is impossible to eliminate all molds and mold spores in the indoor environment. The most influential condition that enhances mold growth is often moisture. It is the only means by which mold growth can be controlled indoors. Moisture problems can have many causes, including uncontrolled humidity. Another major reason is that buildings are tightly sealed, so they lack adequate ventilation, potentially leading to moisture buildup. Moisture problems may include roof leaks, landscaping or gutters that direct water into or under the building, and unvented combustion appliances. Delayed maintenance or insufficient maintenance is also associated with moisture problems in schools and large buildings. Moisture problems in portable classrooms and other temporary structures have recently been associated with mold problems.

PREVENTION OF MOLD GROWTH

As stated in earlier chapters, the key to mold control is moisture control. Interior design education and practice can contribute to the prevention of mold growth in indoor environments. (Warsco and Lindsey, 2003). From space planning of the building interior to the specification of interior finishes, furnishings, fabrics and equipment, interior design decisions can affect the occurrence of moisture and nutrient matter that support microbial growth. Warsco and Lindsey further went on to talk about the achievement of a mold-free environment through four strategies to reduce indoor air pollution. These are source control, separation, filtration and ventilation. Examples of these four strategies are listed below.

- Fix leaky plumbing and leaks in the building envelope as soon as possible.
- Watch for condensation and wet spots. Fix source of moisture problem as soon as possible.
- Prevent moisture due to condensation by increasing surface temperature or reducing the moisture level in air (humidity). To increase surface temperature, insulate or increase air circulation. To reduce the moisture level in air, repair leaks, increase ventilation (if outside air is cold and dry), or dehumidify (if outdoor air is warm and humid).
- Keep heating, ventilation, and air conditioning (HVAC)) drip pans clean, flowing properly, and unobstructed.

- Vent moisture-generating appliances, such as dryers, to the outside where possible.
- Maintain low indoor humidity, below 60% relative humidity (RH), ideally 30-50%, if possible.
- Perform regular building HVAC inspections and maintenance as scheduled.
- Clean and dry wet or damp spots within 48 hours.
- Don't let the foundations stay wet. Provide drainage and slope the ground away from the foundation.

The American Society of Heating, Refrigeration and Air Conditioning Engineers, Inc. (ASHRAE) 62-2004 recommends that humidity levels be maintained within the range of 30% to 60%. Humidity levels greater than 60% can lead to moisture condensation and mold growth in occupied areas and inside low velocity air ducts. The quality of indoor air can be improved by keeping doors and windows closed during the summer, using air conditioning to reduce humidity, and allowing the HVAC system to filter air entering the building. Increasing ventilation rates in areas of elevated humidity can help to keep condensation from occurring. The use of high efficiency filters will also help to reduce airborne mold spore concentrations. Once a source has been discovered, it is critical to repair the problem that caused the mold growth. If the problem is not fixed, mold growth will return on the building materials. It is also very important to keep disturbance to a minimum before isolating the area. Too much disturbance can release millions of spores into the air.

Perdalli et al conducted a study where a total of 1030 microbiological samples were taken in three hospital wards with different air-conditioning features. (Perdalli et al, 2006): no conditioning system (Ward A), a conditioning system equipped with minimum efficiency reporting value (MERV) filters (Ward B), and a conditioning system thoroughly maintained and equipped with high efficiency particulate air (HEPA) filters (absolute) Ward C). The air in each ward was sampled, and the bacterial and fungal concentrations were determined by active and passive methods. The concentration of fungi on surfaces was also determined. The results from this study revealed positive samples in Ward A and Ward B for the active sampling, with average values of 0.50 colony-forming units per meter-cubed in A and 0.16 CFU per meter-cubed in B. Passive sampling was positive only in Ward A with a mean of 0.14 CFU per meter-cubed. Aspergillus was found in 27% and 22% of sampled surfaces in Ward A and Ward B respectively, but no samples were found in Ward C. The most commonly found species was Aspergillus fumigatus (76% of cases in Ward A and 34% in Ward B).

Numerous studies show that the use of air-conditioning systems markedly reduces the concentration of *Aspergilli* in the environment. Proper maintenance of these systems is clearly fundamental if their efficacy should be ensured.

METHODS TO MONITOR AND ANALYSE MOLD GROWTH

Most molds can often be detected by sight or by smell. Mold growth is accompanied by a musty odor as well as a discoloration (white, green, brown, black or orange) of the surface on which the mold is growing. A sensory assessment is by no means enough to monitor mold growth. Different genera of mold come with disease symptoms that are specific to that particular genus. It is therefore very important to identify the fungal types growing in a particular location. A single method to detect mold is not very effective at sampling for types and amounts of mold in a building, so often times a combination of detection methods is used.

The distribution and prevalence of molds in a building is based on different conditions of moisture, temperature and humidity. A study was done, (de ANA, 2006), to determine the distribution and prevalence of species of *Alternaria, Cladosporium, Aspergillus* and *Penicillium* inside and outside of homes of patients allergic to fungi, and to evaluate seasonal variations. Air samples were collected in 22 homes of these patients using a volumetric method of impacting plates with culture media. The isolated species were identified and statistical analyses of the presence of the four fungi were carried out. A total of 431 indoor and 150 outdoor exposed plates were cultured, leading to isolation of 11,843 colonies of fungi. Also, 85.5% of total colonies belonged to the four genera considered.

Results from this study showed that the highest presence of *Aspergillus*, *Cladosporium* and *Penicillium* in indoor environment occurred in autumn. *Alternaria* was more abundant in the summer. In the outdoor environment, *Penicillium* was more abundant in winter and *Aspergillus* in summer. The largest numbers of isolations were of *Cladosporium* and *Penicillium* during all seasons, both indoors and outdoors. *Alternaria* was present in all the homes studied both in summer and in autumn. It also further went on to show the most prevalent species to be *Alternaria alternata, Cladosporium herbarum, Cladosporium cladosporioides, Aspergillus niger* and *Penicillium chrysogenum.* This example goes a long way to show that the type of mold and its relative abundance depend a lot on seasonal variability, which is associated with difference in temperature, humidity and moisture between the different seasons as shown above.

Testing for indoor mold growth involves several different practices. Obvious mold growth can often be seen in areas of past or present moisture problems. Samples may also need to be taken to test for mold on surfaces or in the air in the building. Sampling may include: 1) Tape-lift samples may be taken from a surface suspected to contain mold, 2) swabs or wipes may be taken from a suspected contaminated site, 3) bulk material may be taken from a suspected contaminated site, or 4) air samples may be taken from an area suspected to have a mold problem. A combination of these methods should be employed for thorough investigations. Each of these sampling methods comes with very distinct advantages and disadvantages. This relates a lot to culturable and nonculturable sampling methods.

Nonculturable sampling methods allow for a very quick evaluation of mold spores in the laboratory. On the other hand, the disadvantage with this method is that spores can be more difficult to identify, even to the genus level. Culturable samples take between 7-10 days in the laboratory to grow and analyze. The major advantage is that identification of molds is easy up to even the species level. The disadvantage is that not all spores culture well and this can distort laboratory results.

The tape-lift method involves applying a clear tape, about 1-2 inches directly to the surface of suspected mold growth. The tape is removed slowly with a representative sample adhered to it. The sticky side of the tape is pressed directly onto a clean microscopic slide and analyzed in the laboratory. Alternatively, if a microscope slide is not available, tape can be pressed flat onto the inside of any clean plastic bag. Heavy plastic bags are recommended. Also, care should be taken to ensure that tape is not crumpled, creased, or placed with moist materials. The advantages associated with this method are that it is quick, easy and allows for quick test results. There are some disadvantages associated with this method. It cannot be used to differentiate between viable and non-viable spores. It only provides information on surface mold and not airborne spores, and also, identification to the genus level is very difficult.

The swab sampling method employs the gentle streak of a sterile swab over the area of suspected mold growth. This surface has to be non-porous and should be a defined surface area to provide quantification. The swab may be dry or wetted with a peptone solution. It is then washed in a sterile solution and the solution cultured. This

method is more favorable for bacteria than fungi. Like the tape-lift method, it is quick and easy to do. Also, viable molds that are present can be identified and quantified. Some of the disadvantages associated with this method are that it cannot be used on porous surfaces and that quantification can be significantly affected by the sampling technique.

Bulk sampling can be used to identify both viable and non-viable spores. This method involves the cutting, scraping, or otherwise aseptically removing from the suspected source of mold growth. A portion adequately representative of the surface and small enough for easy transport is collected. Samples can be analyzed by direct microscopy or cultured. This method is also quick, easy and allows for identification and quantification. On the other hand, it is a destructive sampling technique.

Another method of mold sampling is the collection of dust samples. Dust samples should be collected into Mixed Cellulose Ester (MCE) or polycarbonate cassettes with 0.8μm pore size using a high volume vacuum pump. The sample should be collected from a defined sampling area (i.e. 1feet squared). It should also be noted that a minimum of 0.1 grams of dust should be submitted. Samples can be analyzed by direct microscopy, cultured or allergen detection performed by biochemical assay. The advantages are that it allows for identification and quantification (culturable) and that serial dilution can be performed to handle high concentrations. This method requires specialized equipment. Low sample weights may also give biased results. These are some of the disadvantages with this method.

Air sampling methods are effective for non-viable mold spores. The spore trap is a sampling device designed for capturing airborne particles, including spores. The cassette draws air through a slit, thereby impacting particles onto a glass slide that is coated so that the particles will stick to the slide. The device is connected to a vacuum pump calibrated at manufacturers' recommended flow rates. Spores are identified and counted to provide quantification of airborne spores. Like all the other sampling methods, it is quick and easy and allows for identification and quantification. It may also indicate mold growth present that is not visible. Some of the disadvantages with this method are as follows: 1) Spores can be difficult to identify to genus; 2) *Aspergillus /Penicillium* are reported together; 3) We are unable to distinguish between viable and non-viable spores; 4) Samples from dusty areas may be overloaded with particles; 5) High concentrations of spores may be difficult to count: therefore are estimated.

The last sampling method is the use of culturable air samples, also referred to as the Anderson N-6 Sampler. This method involves drawing an air sample over a Petri dish containing culture media. The air is drawn through a sieve plate onto the culture plate. The cultures are incubated and can be identified and enumerated. Different media may be used to culture fungi or bacteria. Its advantages allow for identification and quantification and identification to the species level may be possible. The disadvantages are as listed below as follows: 1) Non-viable spores are not identified, yet they may still be allergenic; 2) Some organisms may not produce spores: therefore

are not identified; 3) Some viable spores may be desiccated during sampling; therefore, results may be significantly lower than the actual level in the air.

MOLD AND SCHOOLS

Indoor Air Quality (IAQ) in schools has always been at the center of health issues because according to statistics, indoor levels of air pollutants can be 2-5 times higher than other buildings, and occasionally 100 times higher than outdoor levels. According to the Minnesota Department of Health, nearly 55 million people, 20 percent of the United States population, spend their days in elementary and secondary schools. According to a 1995 federal government report, an estimated 50 percent of the nation's schools have problems linked to poor indoor air quality. There is a wide variability in how people are affected by mold exposure. People who may be affected more severely and quickly than others include infants and children, elderly people, pregnant women, individuals with respiratory conditions or allergies and asthma and finally persons with weakened immune systems (for example, chemotherapy patients, organ or bone marrow transplant recipients and people with HIV infections or autoimmune diseases). According to the United States Environmental Protection Agency (USEPA), IAQ is important for health, economic and legal reasons. Molds constitute a high percentage of indoor air pollutants and they can cause discomfort, and reduce school attendance and productivity. Moreover, they can contribute to short and long term problems, including asthma (in people allergic to molds), respiratory tract infections and diseases, allergic reactions (molds produce allergens which trigger allergic reactions), headaches, nasal congestions, eye and skin irritations

(molds produce potent toxins and/or irritants), coughing, sneezing and fatigue, dizziness and nausea. In addition, poor indoor air quality can contribute to the closing of schools, create liability problems, and strain relationships among parents, teachers and the school administration.

Although indoor air quality concerns have received schools' attentions for years, the issue of mold has come to the forefront recently. Dangerous mold growing in ceiling tiles, walls, carpet and near ventilation vents in school buildings across the United States is becoming a health concern for students and parents, and an expensive problem for school officials. Some districts have been forced to shut down schools and make millions of dollars in repairs. Lawsuits have been filed by students and staff alike, who claim their long term health problems have been caused by mold reactions. Some of the problems that have been reportedly recently in the media are as follows:

- In Austin, Texas, voters approved a $49.3 million bond issue to pay for mold removal and preventive maintenance in 91 different school buildings.
- Teachers filed a lawsuit against county school officials accusing them of failing to fix known mold problems in Myers, Florida.
- Students were out of class for a period of four weeks while school officials removed mold from their school building at a cost of $1 million in Maryville, Tennessee.

Numerous studies have been conducted world-wide to substantiate the fact that molds are related to diseases. This chapter briefly talks about some of the studies that have been conducted. The Division for Occupational and

Environmental Medicine at the University of Connecticut Health Center conducted a study to review a series of 55 teachers from schools in Connecticut who presented their findings to the University clinic, and to summarize their clinical experience with work-related disease in this population, which could lead to a more formal study. Data were abstracted concerning clinical and environmental factors and entered into a statistical spreadsheet program (JMP for windows).

The results showed that, of the 55 educators, 22 were diagnosed with upper respiratory syndromes (rhinitis or sinusitis), three with bronchitis and 23 with asthma. Of the 23 with asthma, 20 presented with active or symptomatic asthma, and seven of these were incident cases of occupational asthma. In addition, four cases (7%) of granulomatous lung disease (two hypersensitivity pneumonitis and two sarcoidosis) were diagnosed. Finally, three patients (5%) received only non-respiratory diagnosis (panic disorder, sicca syndrome, and vertigo). In 33 work places, the exposures of concern were predominantly related to ongoing "dampness" or visible mold growth. The remaining 22 work places were "dry". Symptoms varied according to the work place environment, with more patients from water-damaged versus "dry" having upper respiratory symptoms (76% vs. 45%) and asthma (45% vs. 23%). All seven patients with incident asthma and all four patients with interstitial lung cancer worked in schools with documented water incursion.

The authors concluded that work-place exposures in water-damaged schools are risk factors for development of work-related lower respiratory disease in school teachers and staff. Identification of such high-risk environments can be done by a simple but thorough qualitative evaluation during a walk-through inspection, and should not require air sampling or surface sampling protocols for microbial contaminants. (Dangman et al, 2005).

In another study, microbial indoor quality and respiratory symptoms of children were studied in 24 schools with visible moisture and mold problems, and in eight non-damaged schools. (Meklin et al, 2002). School buildings of concrete/brick and wooden construction were included. For the indoor environment, investigations included technical building inspections for visible moisture signs and microbial sampling using six-stage impactor for viable airborne microbes. Children's health information was collected by questionnaires. The effect of moisture damage on concentrations of fungi was clearly seen in buildings of concrete/brick construction, but not in wooden school buildings. Occurrence of *cladosporium, Aspergillus versicolor, Stachybotrys*, and *Actinobacteria* showed some indicator value for moisture damage. Presence of moisture damage in school buildings was a significant risk factor for respiratory symptoms in school children. Association between moisture damage and respiratory symptoms in school children was significant for buildings of concrete/brick construction, but not for wooden school buildings. The highest symptom prevalence was found during spring seasons, after a long exposure

period in damaged schools. The results emphasize the importance of the building frame as a determinant of exposure and symptoms.

The two studies explained above substantiate the fact that moisture damage creates a suitable environment for molds (fungi) to grow. When these molds grow, they cause several respiratory diseases, such as asthmatic symptoms to be witnessed in building occupants, especially in school children. Last but not least, the construction of the school building also goes a long way to determining the extent of water damage after a long period of exposure to water.

WHEN DOES MOLD BECOME A PROBLEM

Mold is in the news. People are talking about its potential health and economic impact. But what are the real risks and related issues? The available science about mold is incomplete and very controversial. Scientists have done some studies on mold and have come up with guidance documents to prevent the occurrence of molds indoors. Molds are abundant in the natural environment, as stated in earlier chapters, and unlike a substance like asbestos, there is no universally accepted standard for mold. Validated methods to measure contamination are still in their infancy, and even when measurement techniques are available, there are no clear benchmarks or standard values to compare the results against. Similarly, the diagnosis of mold-related illnesses is also faced with the same uncertainties.

The complexity of molds is even escalated further when there is a constant disagreement between building owners and occupants of such buildings. This really makes scientific judgment and reasonable dialogue very difficult to be accomplished. In some instances, building owners tend to underestimate potentially serious problems, whereas building occupants on the other hand react with excessive alarm to perceived potential threats. This complicates the scientific component of the evaluation and makes risk communication very difficult. In line with this, professional judgment should always be used when it comes to mold.

It has always been very difficult to establish a standard for mold because of the following facts. Health hazards from exposure to environmental molds and their metabolites relate to four broad categories of chemical/biological attributes. These are irritants, allergens, toxins and rarely pathogens. Different mold genera may be more or less hazardous with respect to any of these categories. Also, specific human responses to well-defined mold contaminant exposures are very uncertain and this further makes the issue very complicated. Until these knowledge gaps are bridged, it will forever be very difficult to set simple standards for molds and their contaminants.

INTERPRETATION OF MOLD SAMPLING RESULTS

There are no standards to work with and so the most useful method for interpreting microbiological results is to compare the kinds and levels of organisms detected in different environments. The usual comparisons are mostly between indoor and outdoor environments, or between complaint areas and non-complaint areas. Specifically, in buildings without mold problems, the qualitative diversity (types) of airborne fungi indoors and outdoors should be similar. Conversely, the dominating presence of one or two kinds of fungi indoors and the absence of the same kind outdoors may indicate a moisture problem and degraded air quality.

Also, the consistent presence of certain mold species such as *Stachybotrys Chartarum, Aspergillus versicolor,* or various *Penicillium* genera over and beyond background concentrations may indicate the occurrence of a moisture problem. Generally, indoor molds should be similar and levels should not be greater than the outside environment or non-complaint areas.

METHODS

Forty-three public schools were sampled out of the fifty-five (55) that were earmarked for this study. The sample collections were made over the course of the 2003-04 and 2004-05 school years. The different rooms in the various schools that were sampled represented areas where health problems had been reported. The samples that were taken for analysis in the laboratory were done by the Air-O-Cell method, Swab method and Biotape method. Moisture meter readings were also taken in some of the schools. The dates that these samples were taken were also noted and documented. Mold sampling was done for both the indoor environments in the selected rooms and the outdoor environment as well.

A chain of custody form accompanied each sample that was sent to the laboratory. This form provided the following information: a sample identification number, a description which shows the room where the sample was collected from, a sample type with the following codes; AP- Anderson Plate, SW- Swab, B- Bulk, T-Tape and ST- Spore trap: Zefon, Micro5, Cyclex-d, etc. It also had a section showing the services requested from the laboratory in relation to a particular sample. Turnaround times also had the following codes: STD- Standard: 2 Days (Non-viable), 24- 24 Hours (Non-viable), R- Rush: 6 Hours (Non-viable), C- Culture: 7-14 Days and W- Weekends: Scheduled by noon Eastern Time (ET) Friday only.

The non-viable tests from the spore trap gave figures for the fungal spore counts per meter-cubed as well as genus identifications for the different spores. This test also gave pollen, fiber and mycelial fragment counts. The culturable tests, which involved the Anderson, Swab, or Bulk tests, also gave environmental fungal genus identifications and enumerations. The mold genus identifications and the counts from the non-viable spore trap method and culturable methods were split up and put into an Excel Spreadsheet separately for easy interpretation and analysis.

In order to determine whether mold is or is not a problem in these schools according to the hypotheses for this study, indoor mold counts for the rooms are compared to the outdoor mold counts. Indoor mold counts greater than outdoor mold counts for the individual schools indicate that there could be a mold problem in that particular school. Likewise, if the indoor mold counts are less than the outdoor mold counts, it can be deduced that mold may not be a problem in that school. Graphs were also plotted to illustrate these comparisons.

The statistical software SAS (Version 8.2) was also used in the analysis of the data as outlined in the two excel spreadsheets. Measurements for the outdoor environment were not included in this part of the analysis. This is a way of analyzing the data on the mold counts indoors. The data provided were sorted by school and the mean count of mold for each school and total mold counts for each school were calculated. The schools were then ranked from the highest to the lowest in terms of total mold counts. This is to give the school board a guideline as to how to prioritize schools in terms of attention, funds and resources when it comes to mold remediation. Although comparisons

between indoor and outdoor environments were used to determine mold problems in the schools, it will also be logical to set a threshold value, above which the environment is deemed unsafe. In a publication by Bush and Portney, an unhealthy indoor environment was defined by a mold contamination count greater than 1000 spores per meter-cubed. This standard will be used as a value against which the ranking will be done. Also, the data were again sorted by the fungal spores identified and the respective counts. The mean count for each genus of mold and total count for each mold genus were also noted. This gives a general idea of the most prevalent mold genus affecting Richmond public schools. More research could be done into the life patterns of this mold genus, thereby bringing us close to curtailing its presence. All these are different approaches to analyzing the available data. On the other hand, another method of analyzing the data would be to calculate the ratio of indoor mold counts to outdoor mold counts. It has been stated earlier that for a healthy indoor environment, counts for the indoor air should equal the counts for outdoor air, bringing the ratio to an approximate value of one. If the ratio exceeds one (1), then there could be a problem and if the ratio is less than one (1), we can say there could be no mold problem. A very high magnitude of the ratio signifies a serious mold problem and vice versa.

A paired t-test was done in SAS for the mean difference between the indoor total counts and outdoor total counts. All statistical procedures were conducted at a 5% level of significance.

RESULTS

The results obtained from this study are summarized below. Detailed information is given in Appendix 1 and Appendix 2. It is basically a comparison of indoor mold counts and outdoor mold counts for each school that was sampled. This is to test the validity of the null hypothesis for each school, which is stated in the abstract for this study, "Total inside mold counts are not elevated above total outside mold counts in Richmond public schools". It also investigates the primary objective of this study as defined in the hypothesis.

The Adult Career Development Center was sampled on April 2nd, 2004. Five rooms were sampled and these are room 105, 106, 112, 101 and 201. The outdoor environment was also tested for each room and is shown in the appendices as room 555 for all the schools. The Air-O-Cell (AOC) result analysis did not detect any fungal growth in rooms 106 and 101. In rooms 112 and 201, fungal growth was found to be less than for the outside air. No fungal growth was found growing in any of the rooms according to the swab results analysis. A comparison of indoor to outdoor air shows that there was no mold problem in this school at the time of testing. We therefore fail to reject the null hypothesis for this school.

Five rooms were tested in Albert Norell V School. These were rooms 201, 204, 205, 207 and 208. The outdoor environment was room 555 as stated earlier on. AOC result analysis detected fungal growth in all five rooms. Fungal growth in the indoor air

exceeded fungal growth for the outside air. The swab results analysis revealed some mold growth in rooms 201 and 208. These were *Pen/Asp-Type*, *Epicoccum* and *Periconia/Smuts*. The indoor air mold counts exceeded the outdoor mold counts and this shows that there could be a mold problem in this school. We therefore reject the null hypothesis and go with the alternative hypothesis.

The Amelia Street School was tested on June 8th, 2004. Five rooms were sampled in this school and these were rooms 113, 108, 110, 102 and 107. Room 555, representing the outdoor air was also sampled. AOC result analysis revealed that mold counts found in the indoor air were less than the outdoor air. The swab result analysis found fungal growth in all the rooms that were tested. These were *Aspergillus, Yeast*, *Alternaria* and *Non-sporulating colonies*. A comparison of indoor to outdoor air shows that there was no mold problem in this school at the time of testing. We fail to reject the null hypothesis.

Bellevue School was tested on March 12th, 2004. AOC and swab samples were taken in four rooms and these were rooms 102, 103, 104 and 105. Outside samples were room 555. Room 105 was free of any fungal growth. Fungal growth was found to be less in the indoor air as compared to the outdoor air. Some fungal growth was detected by the swab result analysis in room 103 and 104. These were *Aspergillus* and *Cladosporium.* None was detected in rooms 102 and 105. Fungal growth was found to be less outside compared to the inside. Hence, we can conclude that there could be a mold problem. We therefore reject the null hypothesis.

Blackwell Elementary School was tested on February 2nd, 2004. AOC and Biotape samples were taken in rooms 103, 116, 119, 208 and 212. Room 116 had a very

high mold count. Biotapes did not reveal any growth in all the rooms, except low amounts of *Curvularia* in room 119. Mold counts were higher inside as compared to the outside. We can conclude that there could be a mold problem. We reject the null hypothesis and go with the alternative.

Broad Rock Elementary School was tested on three different days. February 27th, March 5th and March 15th, 2004. Samples were taken in room 109, 111, 206, auditorium and the main office. AOC result analysis showed that fungal growth was more inside compared to the outside. The swab result analysis found *Cladosporium, Aspergillus* and *Penicillium* in high quantities in all the rooms sampled. Hence, we can conclude that mold could be a problem in this school. We therefore reject the null hypothesis.

Carver Elementary School was tested on April 30th, 2004. Samples were taken from rooms 102, 103, 106, 3A and 3D. AOC and swab samples were taken indoors and outdoors. AOC result analysis revealed that counts of indoor fungal spores were greater than counts of outdoor fungal spores. Swab samples found fungal growth in all the rooms except room 3D. These were *Alternaria, Penicillium, Yeast, Mucor* and *Non-sporulating colonies*. We can therefore deduce that mold could be a problem in this school because indoor counts exceed outdoor counts. We therefore reject the null hypothesis and go with the alternative hypothesis.

Chandler Middle School was tested on May 26th, 2004. AOC and swab samples were taken in the auditorium, room 202, room 203 and room 204. The AOC result analysis found fungal spores indoors to be higher than fungal spores outdoors. Samples also had a wide variety of fungal spores, which shows that there actually may be a serious

moisture problem in this school, causing more molds to grow easily. Swab result analysis showed *Cladosporium* in the auditorium and room 203 and *Penicillium* in room 202. None was detected in room 204. We can therefore conclude that there could be a mold problem. We reject the null hypothesis and go with the alternative hypothesis.

Chimborazo Elementary School was tested on February 19th, 2004. Three rooms were sampled in this school. These are room 121, the gym and the cafeteria. Samples were taken by AOC and by the swab method. Total mold counts according to the AOC result analysis indoors exceeded total mold counts outdoors. No mold was detected in all rooms according to the swab result analysis. The highest level of mold growth was found in the gym. The outside AOC sample was taken for that particular day and compared to the inside samples and it was found that the fungal growth in the inside air was higher as compared to the outside air. Hence we conclude that there could be a mold problem and therefore reject the null hypothesis.

Clarks Springs Elementary School was tested on April 23rd, 2004. AOC and Swab samples were taken in room 108, room113, room 120 and the media room. AOC result analysis did not show a significant amount of mold spores in any of the rooms. Mold counts indoors were far less as compared to mold counts outdoors. *Penicillium* was found in room 108 and *Aspergillus* in the media room. A comparison of indoor to outdoor air shows that there was no mold problem in this school at the time of testing. We fail to reject the null hypothesis.

Elizabeth Reid School was tested on May 20th, 2004. AOC and Swab samples were taken in rooms 2, 5, 9, 10 and 11. Outside air measurements were taken for that

particular day. Fungal growth was found in all the rooms. The swab analysis found *Cladosporium, Alternaria* and *Non-sporulating colonies* in all rooms except room 10. Fungal growth was found to be more inside compared to the outside. Hence we conclude that there could be a mold problem in this school. We therefore reject the null hypothesis.

Fairfield Court was tested on April 6th, 2004. AOC and Swab samples were taken in rooms 110, 113, 114, 117 and the cafeteria. AOC result analysis found a significant spore count in all the rooms with a very high count in the cafeteria. *Aspergillus* was found in room 114 and *Penicillium* in room 117. None was detected in room 110, 113 and the cafeteria according to the swab result analysis. The outside air was also sampled by AOC the same day and the mold counts were less than mold counts for the inside environment. Hence we conclude that there could be a mold problem in this school. We reject the null hypothesis and go with the alternative hypothesis.

Fox Williams Elementary School was tested on February 23rd, 2005. Sampling was executed by AOC and Biotape. Five rooms were sampled in this school. These were rooms 110, 115, 203, 214 and B1. Fungal growth was found in all the rooms with the highest counts in room B1. The biotape analysis found medium growth in room B1 and low concentrations were found in the remaining rooms. The genera observed were *Stachybotrys, Chaetomium, Periconia/Smuts, Ascospores* and *Cladosporium*. A comparison of indoor to outdoor air shows that there was no mold problem in this school at the time of testing. We fail to reject the null hypothesis.

AOC and Swab samples were taken in rooms 102, 103, 105, 201 and 207 at G. H Reid Elementary School. This was done on May 19th, 2004. Sampling was also done for

the outside air and is represented by room 555 in the database. Outside AOC samples compared to indoor samples reveal that indoor mold counts exceed outdoor mold counts. The highest mold growth was found in room 102. Also, a wide variety of molds were found in all the rooms and this is a strong indication that there could be a serious moisture problem in this building. Swab result analysis found *Yeast* in all the rooms and *Cladosporium, Aspergillus, Alternaria* and *Fusarium* in some of the rooms. Hence we conclude that there could be a mold problem and we reject the null hypothesis.

George Mason Elementary School was also sampled on June 4th, 2004. AOC and Swab samples were taken in rooms 114, 115, B1, B3 and the nurse clinic. AOC analysis detected mold spore counts in all the rooms. Swab result analysis revealed fungal growth in all the rooms except the nurse clinic. Also the highest amount of mold spores was found in the nurse clinic by the AOC result analysis. Species observed by swab were *Yeast, Cladosporium, Penicillium* and *Non-sporulating colonies*. The outside AOC sample was taken for that particular day and compared to the inside air and it was found that the fungal growth was more in the inside rooms than in the outside air. Hence we conclude that there could be a mold problem. We therefore reject the null hypothesis and go with the alternative.

George Wythe High School was tested on March 19th, 2004. Five rooms were sampled and these were room 102, room 103, room 111, room 112 and room 137.AOC and Swab samples were taken in these rooms. Outside AOC samples were also taken and are represented by room 555. Room 102 had the highest level of molds. The swab sample analysis did not detect any fungal growth in any of the rooms. A comparison of indoor to

outdoor air shows that there was no mold problem in this school at the time of testing. We fail to reject the null hypothesis in this case.

Ginter Park Elementary School was tested on February 9th, 2005. AOC and Biotape samples were taken in rooms 1, 12, B8, auditorium and the cafeteria. AOC analysis showed fungal spore counts in all the rooms with the highest in room 12. The biotape analysis did not detect any fungal growth in any of the rooms. AOC samples were also taken outside and it was realized that mold counts inside were greater than mold counts outside. Hence we conclude that there could be a problem. We reject the null hypothesis and go with the alternative.

Holton Elementary School was tested on June 16th, 2004. Five rooms were tested and these rooms were rooms 104, 116, 117,210 and 212. AOC samples and Swab samples were taken in these rooms. AOC result analysis indicates fungal growth in all the rooms with the highest levels in room 212. Swab result analysis also revealed the presence of *Alternaria, Cladosporium, Epicoccum, Curvularia, Aspergillus, Penicillium* and *Mucor* species in all the rooms. A comparison of indoor to outdoor air shows that there was no mold problem in this school at the time of testing. We therefore fail to reject the null hypothesis.

J. B. Fischer Elementary School was sampled on February 25th, 2005. AOC and Swab samples were taken in four rooms and a fifth room unknown according to the database. Generally very low to medium fungal growth was found in all the rooms. Swab result analysis showed no fungal growth detection. A comparison of indoor to outdoor air

shows that there was no mold problem in this school at the time of testing. We therefore fail to reject the null hypothesis.

J. L. Francis Elementary School was tested on April 20th, 2004. AOC and Swab samples were taken in five rooms in this school and these are room 9, room 12, room 16, room 22 and room 34. The AOC result analysis found fungal growth in all the rooms with the highest levels in room 22. The counts were insignificant comparing them to the large amounts of molds in the outdoor environment. The swab analysis found fungal growth for *Penicillium, Aspergillus, Yeast,* and *Bipolaris/Drechslera* in all rooms with the highest in room 34. Unknown mold specie was found in room 9. A comparison of indoor to outdoor air shows that there was no mold problem in this school at the time of testing. We fail to reject the null hypothesis.

John B. Cary School was tested on January 28th, 2005. AOC and Biotape samples were taken in rooms 104, 204, 205, cafeteria and the music room. AOC result analysis found fungal growth in all the rooms with the highest level of growth in the cafeteria. AOC samples were also taken outside. A comparison of both environments showed the inside fungal growth to be higher than the outside measurements. Biotape results showed no detection of fungal growth in any of the rooms. Based on the comparison, we can conclude that there could be a mold problem. We therefore reject the null hypothesis and go with the alternative.

John F. Kennedy High School was tested on March 18th, 2004. AOC and Swab samples were collected in five rooms. These were room 120, room 121, room 238, room 248 and the teacher's lounge. AOC result analysis showed fungal growth in all the rooms

with the highest levels in room 123. Biodiversity amongst the molds were also very high in the indoor air showing there could be a serious moisture problem in this school. The swab result analysis also detected *Cladosporium* and *Non-sporulating colonies* in the teacher's lounge, room 238 and room 120. AOC samples were also taken on that same day for the outside environment and are represented by room 555. Comparing it to the inside fungal growth showed the outside fungal growth to be less than the inside fungal growth. Hence we conclude that there could be a mold problem. We reject the null hypothesis and go with the alternative hypothesis.

John Marshall High School was tested on June 11th, 2004. AOC and Swab samples were picked up from rooms 101, 112, 138, 222 and 234. The AOC result analysis found fungal growth in all the rooms, with the highest levels in room 234 compared to the others. Swab result analysis also revealed the presence of *Cladosporium* and *Alternaria* in room 138 and *Aureobasidium* and *Yeast* in room 101. The outside AOC sample was taken for that particular day and compared to the inside samples and it was found that the fungal growths inside were higher than fungal growths outside. Hence we conclude that there could be a mold problem in this school. Biodiversity of molds is relatively very high. We reject the null hypothesis and go with the alternative.

Lucile M. Brown Middle School was tested on May 27th, 2004. AOC and Swab samples were taken in room 107, room 204, room 303, room 401 and the cafeteria. The AOC result analysis found fungal mold growth in all the rooms with the highest mold levels in room 401. Swab results also detected *Cladosporium* and *Non-sporulating colonies* in room 107, room 204 and room 303. AOC samples were taken outside on that

particular day and compared to the inside air. It was found that outside air had more fungal growth than the inside air. A comparison of indoor to outdoor air shows that there was no mold problem in this school at the time of testing. We fail to reject the null hypothesis.

Maggie Walker School was tested on June 9th, 2004. AOC and Swab samples were collected in room 112, room 126, room 206, room 312 and room 319. Fungal growth was detected in all the rooms with very significant levels of growth in room 312. From the swab results, *Penicillium* and some *Non-sporulating colonies* were found in room 312 and *Fusarium* in room 126. AOC samples were collected outside on the same day which was far less in counts as compared to the inside air. Hence we conclude that there could be a mold problem in this school. We reject the null hypothesis and go with the alternative.

Mary Munford School was tested on June 15th, 2004. AOC and Swab samples were collected in four rooms and these were room 106, room 107, room 201 and room 206. Low counts of fungal growth were found in all the rooms. Swab results found *Epicoccum* in room 106, *Cladosporium* and *Penicillium* in room 107 and *Aureobasidium* was also found in room 206. AOC samples were taken on that particular day for the outside air and compared to the inside air A comparison of indoor to outdoor air shows that there was no mold problem in this school at the time of testing. Hence we conclude that mold could not be a problem. We therefore fail to reject the null hypothesis.

Maymont School was tested on May 25th, 2004. AOC and Swab samples were collected in room 105, room 106, room 107, room 108 and room 109. All the rooms that

were sampled showed levels of fungal growth with the highest in room 107. Swab result analysis also found *Yeast* in room 107. No molds were detected in the other rooms. AOC samples were taken on that same day for the outside air and comparing it to the inside air measurements, it was found to be lower than the inside air measurements. Hence we can conclude that there could be a mold problem in this school. We therefore reject the null hypothesis.

Miles Jerome Jones Elementary School was also part of this study. The date of sampling was not recorded according to the database. AOC and Swab samples were collected in the following rooms; room 108, room 109, room 203 and room 206. AOC samples found fungal growth in all the rooms with the highest levels noticed in room 108. Swab result analysis found *Aspergillus* in room 109 and *Non-sporulating colonies* in room 108. AOC samples were also taken outside and compared to the inside. It revealed that inside fungal spore count was more than outside fungal spore count. Hence we conclude that mold could be a problem. We therefore reject the null hypothesis.

Mosby Middle School was tested on May 17th and April 30th, 2004. On May 17th, AOC and Swab samples were collected in room 107, room 110, room 202, room 205 and room 208. AOC result analysis found the highest count of fungal spores in room 208 as compared to the other rooms. The swab samples did not show any fungal growth. AOC and Swab samples were also taken in room 209 on April 30th, 2004. The swab analysis detected a very high growth in room 209 with *Yeast* and *Penicillium* A comparison of indoor to outdoor air shows that there was no mold problem in this school at the time of

testing. Hence we can conclude that there could be no mold problem. We therefore fail to reject the null hypothesis.

Oak Grove Elementary School was tested on May 18th, 2004. AOC and Swab samples were collected in rooms 104, 105, 106, 201, 203, 204 and 206. AOC results found mold spores in all the rooms. Room 204 had the highest level of fungal spores compared to the other rooms that were sampled. Swab results also showed no fungal growth in any of the rooms that were sampled. AOC samples were taken on that particular day for the outside and compared to the inside. It was realized that mold spore counts outside were lower than it was inside. Hence we conclude that mold could be a problem. We therefore reject the null hypothesis.

Onslow Minnis Middle School was tested on June 21st, 2004. AOC and Swab samples were taken in room 104, room 106, room 207 and room 305. AOC results revealed mold spores in all the rooms but at very low levels. Swab result analysis detected *Cladosporium, Penicillium, Paecilomyces* and *Alternaria.* AOC samples were taken outside and compared to inside mold spore counts. A comparison of indoor to outdoor air shows that there was no mold problem in this school at the time of testing. Hence we can conclude that there could be no mold problem in this school. We fail to reject the null hypothesis.

Overby-Sheppard School was tested on April 20th, 2004. AOC and Swab samples were taken in rooms 100, 102, 118, 110 and the media center. Mold spores were found in all the rooms according to the AOC samples with the highest level in room108. Swab result analysis found *Aspergillus, Yeast, Penicillium* and *Non-sporulating colonies*. The

outside AOC sample was taken for the particular day and compared to the inside samples and it was found that the fungal spore count was less outside than inside. Hence we conclude that there could be a mold problem in this school. We therefore reject the null hypothesis.

Patrick Henry Elementary School was tested on March 19th, 2004. AOC and Swab analysis were taken in room 106, room 108, room 202 and room 203. The AOC samples found fungal spores in all the rooms with the highest in room 108. Swab result analysis found *Aspergillus* and *Cladosporium* in room 106 and room 108 respectively. No fungal growth was detected in the other two rooms. AOC samples were taken outside on that particular day and compared to the inside. Inside measurements were higher than outside measurements. Hence we conclude that there could be a mold problem. We therefore reject the null hypothesis and go with the alternative.

The Preschool Development Center was also tested on March 10th, 2005. AOC and Biotape samples were taken in room 1, room 2, room 4, room 5 and room 9. Very low levels of fungal spores were found in the rooms according to the AOC samples. Swab result analysis showed no fungal growth in any of the rooms. A comparison of indoor to outdoor air shows that there was no mold problem in this school at the time of testing. We therefore fail to reject the null hypothesis.

Richmond Technical Center (RTC) was tested on February 16th, 2005. AOC and Biotape samples were taken in room 108, room 113, room 201, room 207 and room 235. AOC samples found fungal spores in all the rooms with the highest level in room 235. Swab result analysis detected *Basidiospores, Stachybotrys, Periconia, Smuts, Alternaria,*

Ascospores and *Epicoccum.* This signifies a high biodiversity of mold spores in the inside. AOC samples were taken outside that particular day and compared to the inside and it was found out that the inside mold spore counts exceeded the outside. Hence we conclude that there could be a mold problem in this school. We reject the null hypothesis.

Southampton Elementary School was tested on April 23rd, 2004. AOC and Swab samples were taken in room 15, room 18, room 26, room 28 and room 29. The AOC result analysis found mold spores in all the rooms Swab results detected nothing in the rooms. A comparison of indoor to outdoor air shows that there was no mold problem in this school at the time of testing. We fail to reject the null hypothesis.

Summer Hill Elementary School was tested on April 5th, 2004. AOC and Swab samples were taken in room 1, room 5, room 9, room 11, Basement 18, Basement 19 and the auditorium. Room 9 and Basement 19 had the highest mold spore counts as compared to the other rooms. The swab analysis also detected *Aspergillus, Yeast, Penicillium, Cladosporium, Mucor* and *Non-sporulating colonies.* The outside AOC samples were taken that particular day and compared to the inside samples and it was found that inside fungal growth exceeded outside fungal growth. Hence we can conclude that there could be a mold problem in this school. We reject the null hypothesis and go with the alternative.

Swansboro Elementary School was tested on May 28th, 2004. AOC and Swab samples were collected in room 103, room 106, room 107, room 203 and the media center. The AOC result analysis found a high spore count in all the rooms with the highest in room 203. The swab sample found *Penicillium, Cladosporium, Yeast* and

Acremonium with the highest fungal growth in the media center. The outside AOC sample was taken for the particular day and compared to the inside samples and it was found that the fungal spore count was less outside than inside. Hence we can conclude that there could be a mold problem. We therefore reject the null hypothesis.

T.C Boushall was tested on June 1st, 2004. AOC and Swab samples were taken in room 156, Choir room, Health B and Grade VI room. AOC result analysis found the highest level of mold spores in Health B compared to the other rooms sampled. The swab results did not detect any fungal growth. A comparison of indoor to outdoor air shows that there was no mold problem in this school at the time of testing. We fail to reject the null hypothesis.

Thomas Jefferson High School was tested on June 22nd, 2004. AOC and Swab samples were taken in room 102, room 106, room 110, room 206, room 219 and room 309. The AOC result analysis found fungal growth in all the rooms sampled, with the highest count in room 110. The swab sample analysis found a confluent growth in room 309. The species observed in the swab analysis were *Alternaria, Cladosporium* and *Penicillium*. A comparison of indoor to outdoor air shows that there was no mold problem in this school at the time of testing. We therefore fail to reject the null hypothesis.

Thompson Middle School was tested on March 17th, 2004 and May 11th, 2005. AOC and Swab samples were taken in room 102, room 105, room 107, room 112 and room 205B. AOC result analysis found fungal spores in all the rooms with the highest in room 112. The swab result analysis showed the detection of *Aspergillus, Aureobasidium*

and *Yeast*. Outside AOC samples were collected on that particular day and compared to the inside and it was found that mold counts inside were about five times more than the mold counts outside. Hence we can conclude that there could be a mold problem. We therefore reject the null hypothesis and go with the alternative hypothesis.

Westover Hills Elementary School was tested on June 14th, 2004. AOC and Swab samples were taken in room 3, room 6, room 17 and room 21. AOC result analysis found mold spores in all the rooms with the highest level in room 3. Swab results also detected *Cladosporium, Curvularia, Epicoccum, Sterile Mycelium, Penicillium* and *Acremonium.* A comparison of indoor to outdoor air shows that there was no mold problem in this school at the time of testing. We therefore fail to reject the null hypothesis.

Woodville Elementary School was tested on June 7th, 2004. AOC and Swab samples were collected in room 116, room 118, room A5 and room A7. The AOC result analysis found fungal spores in all the rooms with the highest in room A7. The swab samples detected *Cladosporium, Yeast* and *Non-sporulating colonies.* A comparison of indoor to outdoor air shows that there was no mold problem in this school at the time of testing. We therefore fail to reject the null hypothesis.

Box plots and Normal Probability plots from the Univariate procedure from SAS showed that the data for this study did not follow a normal distribution. According to the Shapiro-Wilk test for normality, the P-value of 0.0001 is less than the alpha value of 0.05, thereby rejecting the null hypothesis that the data for this test are normal. This is known as count data and refers to the number of successes in each school. It follows a Poisson distribution.

On the contrary, the sample size is large (greater than thirty (30) schools) and so the sample means follow a normal distribution.

The SAS procedures sorted the data by school and fungal spores identified in terms of the total mold spore counts per meter-cubed. A complete ranking of the schools from the highest to the lowest is presented in Table 1. The same ranking system was applied to the type of fungal spores and presented in Table 2. In a brief result analysis, it was found that Maggie Walker School had the highest total of 58138.08 counts/m3, followed by Lucille M. Brown Middle School with 47734.94 counts/m3, Carver Elementary School with 32002.96 counts/m3, Chandler Middle School with 22402.08 counts/m3 and the rest of the schools in descending order. It was also realized that *Cladosporium* was the most dominant fungal spore identified with a total of 78291.00 counts/m3, followed by *Ascospores* with 65350.00 counts/m3, *Basidiospores* with 63811.00 counts/m3, *Leptodontidium* with 24110.00 counts/m3 and the rest of the fungal spore types in descending order.

Results from the value of the ratio of inside mold counts to outside mold counts showed Maggie Walker School to be the school with the highest mold problem with a value of 217.75.

The paired T-test conducted for the mean difference between indoor mold counts and outdoor mold counts gave a t-value of 0.44 and a p-value of 0.6634, but this is a two-tailed t-test. This gives a p-value of 0.33 for a one-sided t-test. The p-value of 0.33 is greater than the alpha value of 0.05, showing the test to be insignificant, meaning the

differences between the outdoor and indoor mold counts are not significantly different amongst the schools sampled.

DISCUSSION AND CONCLUSION

This study has been able to identify and differentiate the schools that could be faced with a mold problem. Out of the forty-three (43) schools that were sampled, twenty-five (25) could be faced with a mold problem, representing 58% of the total. With these mold-impacted schools in mind, the school board can now make constructive decisions on the schools to have them lined up for further testing or possible mold remediation work. Appropriation of funds would be more effective as more money can be allocated for clean-up and renovating these mold-impacted schools. Surpluses from the schools with no problems can be diverted into other important ventures as the purchase of books, technology-driven aids such as computers, healthcare in schools and incentives for teachers to help them do a good job with the students.

Mold genera that were identified in this study were ranked in descending order from the highest total mold count to the lowest total mold count. The ten top ranking mold genera were *Cladosporium, Ascospores, Basidiospores, Leptodontidium, Aspergillus/Penicillium, Myxomycetes, Epicoccum, Alternaria, Pen/Asp-Type and Bipolaris/Drechslera.* (TABLE 2).

The genus *Leptodontidium* is a group of mold-type fungi, but is not a mold in itself. (Huang, 1994). The disease Sooty blotch severity varied among apple cultivars or selections according to a survey in 1989 and 1992. Studies support the hypothesis that

Leptodontidium elatius fungi are epiphytes and obtain their nutrients not from components of the cuticle, but more likely from fruit leachates. (Belding et al, 2000). Although it may have some correlation with mold disease, it is not a mold and its effects have not been verified. It is known to at least cause some diseases in plants such as apples.

Ascospores are a large category of spores produced in a sac-like structure that are found everywhere in nature and include more than 3000 genera. Most *Ascospores* of health or Indoor Air Quality (IAQ) importance are identified separately by their genus when possible on an IAQ report, with an example being *Chaetomium.* The *Ascospore* category is used primarily on these reports for a large group of less important spore types often found in quantity on outdoor air samples. It is also used as a general morphological identification on tape samples for certain samples in those cases when the spores do not appear to represent any of the IAQ significant genera. It is therefore not a very dreadful mold.

The rest of them, for example *Cladosporium* and *Aspergillus* are what we call opportunistic fungal pathogens and these are dangerous because they can grow at body temperatures. These agents are common on plant and soil substrates and in outdoor air and are also present in most indoor environments. Therefore, it is difficult to completely prevent exposure to opportunistic fungal pathogens. Its occurrence high up in the table is therefore a common scenario. *Aspergillus* causes the disease Aspergillosis and is a very dangerous mold. *Cladosporium* is rarely pathogenic and is found everywhere, many times the most common and numerous molds found outdoors. Indoor concentrations are

usually not as high, but it is an important airborne allergen and common agent for hay fever, asthma and other allergy-related symptoms. It can thrive in various indoor environments, appearing light green to black (the black mold on air vent grills is usually *Cladosporium*).

Most of them are also not considered what we call strict xerophillic molds and an example is *Aspergillus*. Xerophillic molds grow under low water conditions and are typically associated with high humidity conditions. Therefore it is suspected that these molds are part of the natural regional flora and were introduced inside by constant movement of people and items between the two environments.

Stachybotrys came at the bottom of the ranked table with the least counts in the indoor environment and this is a very important observation because it is considered one of the most lethal molds. It is found indoors primarily on wet cellulose containing materials. Its presence therefore is evidence of a serious moisture problem. It is the "toxic black mold" that has generated much media attention. Some of its species produce a potent toxin that is lethal to animals. One species produces a toxin linked to the bleeding lung deaths of several infants. A host of other toxic reactions in humans are also linked to it, but many of these require further study. *Stachybotrys* is sometimes difficult to detect indoors because many times it will grow unseen on the back of walls or in the wall cavity with little disturbance that would cause it to be detected by routine air sampling. This is potentially also when it is of most health concern; when it covers entire wall areas and constantly produces toxins undetected. It has been found through studies that non-cultured laboratory analyses (Air-O-Cells and tape lifts) usually are the proper method of

identification because it does not grow or compete well on most culture plate media. It is also reported that even non-viable spores can be toxigenic. It could also be a possibility that because it grows undetected, it had very low counts from the samples that were taken.

It is not surprising that Maggie Walker School came first with the highest mold problem based on the ratio of inside to outside mold counts. This is because there was a very high level of biodiversity in the types of molds that were found in this school. Most of the molds were not found in the outside environment showing that moisture could be a major problem in this school, making the indoor environment conducive for mold growth.

Different mold types were found in both the inside air and outside air for the different rooms that were sampled. It is adequate for mold sampling to find the same types of molds in both environments and the numbers found inside should be less than numbers of the same mold outside. Comparisons of inside and outdoor mold counts and the ratio of the two have successfully categorized and ranked the schools with the mold problems, but these are based on totals for all the molds that were found. Taking the mold types individually, a school could have a problem with one mold and not with another. A typical example is Albert Norell V. Overall totals indicate that there could be a mold problem in this school. Breaking it down according to the different mold types show that counts for *Ascospores* are more outside than inside. This means that this school has no problem with *Ascospores*. On the other hand, *Cladosporium* and *Pen/Asp-Type* counts inside exceed the counts outside. This indicates a problem in this school for

Cladosporium and *Pen/Asp-Type*. It is therefore very important that after identifying the schools that could be faced with molds, further analysis is done to find out which molds are causing the problems and which ones are not.

To summarize everything, airborne fungal levels are variable and there is always the possibility of a false negative air sample. This means that airborne fungal counts taken at a certain time will indicate that a problem does not exist, when in fact there is a problem. The first issue is to determine the cause and correct it, and air sampling should be employed as a last resort and sometimes is even not necessary.

RECOMMENDATIONS

The following recommendations will go a long way at addressing the potential mold growth in the impacted rooms in the different schools.

Sampling alone would not be enough to assess the mold problem effectively in these schools and other techniques should be employed together with this method. First and foremost a site assessment should be conducted. There are several reasons why a walk-through is important. It helps us assess the suitability of the rooms for a particular group of occupants and type of activity. It also helps identify possible causes of complaints from the current occupants. During preliminary building walkthroughs, environmental information of a fairly general type could be assembled and would help us identify the need for an in-depth building evaluation if need be. Mold that is visibly growing could also be noted. In this case, all porous and semi-porous materials that are mold-impacted could be discarded. Occupants are interviewed for their version of what is going on. The age of the building should be taken into consideration, as well as examination of the physical structure, maintenance activities and occupancy patterns. Potential sources of biological agents and current or past water damage or excess moisture should be documented. A plan for an in-depth investigation such as taking samples should be put in place. Temperature and moisture meter readings should be taken to help pinpoint areas of potential biological growth. Temperature readings are very

important because it is a determining factor in moisture transfer and condensation. Humidity control is also very important in mold assessments. According to guidance published by the USEPA, humidistats can be installed to improve the performance of HVAC equipment. Humidistats continually read the percentage relative humidity and are typically installed in central locations in the occupied space. Whenever a set point percentage relative humidity is exceeded, the humidistats will turn on the HVAC equipment and cause it to run until the percentage relative humidity is reduced to acceptable levels. The USEPA recommends that humidistats be operated at a set point of around 45% relative humidity.

After all this is done, a mold-sampling plan is put in place. This comprises the type of agent such as *Stachybotrys*, source of agent such as outdoor air, humidifier, etc, sample collection such as bulk samples, air samples, etc, and the sampling plan to be employed. An example is collection of bulk and surface samples from materials with suspected fungal growth.

All these steps when taken will give a clearer picture of mold situations in indoor environments and likewise, evaluations that would be done will give a more accurate and precise estimate of the problem.

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Table 1. Individual Schools ranked in alphabetical order and their associated Statistical Parameters.

School	No. of Obs.	Inside Counts/m3	Outside Counts/m3	Ave. Mold Count/m3	Inside/Outside Ratio	diff/counts/m3
Adult Career Dev. Center	5	81	293	16.2	0.28	-212
Albert Norell V	15	62	44	4.13	1.41	18
Amelia Street School	24	1346	8776	56.08	0.15	-7430
BellevueSchool	5	294	160	58.8	1.84	134
Blackwell Elem. School	16	1921	9	120.06	213.44	1912
Broadrock School	39	3526	2934	90.41	1.20	592
Carver Elem. School	22	32003	13868	1454.68	2.31	18135
Chandler Middle School	18	22402	7000	1244.56	3.20	15402
Chimborazo Elem. School	4	208	27	52	7.70	181
Clark Springs Elem. School	18	1602	2028	89	0.79	-426
Elizabeth Reid School	45	8871	8161	200.33	1.09	710
Fairfield Court	7	2694	2053	384.86	1.31	641
Fox Williams Elem. School	5	5	18	1	0.28	-13
G.H Reid Elem. School	42	8903	7928	211.98	1.12	975
George Mason Elem. School	31	12457	6880	401.84	1.81	5577
George Wythe Elem. School	13	482	691	37.08	0.70	-209
Ginter Park Elem. School	15	45	18	3	2.50	27
Holton Elem. School	20	65	160	3.25	0.41	-95
J.B Fischer Elem. School	0	Low	Medium	0	1.00	0
J.L Francis Elem. School	17	7736	31468	455.06	0.25	-23732
John B. Cary	15	43	3	2.87	14.33	40
John F. Kennedy High School	16	4346	4080	271.63	1.07	266
John Marshall High School	35	12110	7442	346	1.63	4668
Lucile M.Brown Middle School	22	47735	81066	2169.77	0.59	-33331

Maggie Walker School	24	58138	267	2422.42	217.75	57871
Mary Munford School	20	188	460	9.4	0.41	-272
Maymont School	33	2056	1920	62.3	1.07	136
Miles Jerome Jones Elem. School	24	2346	2028	97.75	1.16	318
Mosby Middle School	27	6986	22514	258.74	0.31	-15528
Oak Grove Elem. School	47	9239	8960	196.36	1.03	279
Onslow Minnis Middle School	21	276	588	13.14	0.47	-312
Overby-Sheppard School	17	824	454	48.47	1.81	370
Patrick Henry Elem.	19	2214	1254	116.52	1.77	960
Preschool Dev. Center	12	35	66	2.92	0.53	-31
RTC	19	151	0	7.95	151.00	151
Southampton Elem. School	13	403	587	31	0.69	-184
Summer Hill Elem. School	28	2909	1253	103.89	2.32	1656
Swansboro Elem. School	38	15604	6373	410.63	2.45	9231
T.C Boushall Middle School	27	4535	4987	167.96	0.91	-452
Thomas Jefferson School	16	304	508	19	0.60	-204
Thompson Middle School	6	2267	320	377.83	7.08	1947
Westover Hills Elem. School	14	246	680	17.57	0.36	-434
Woodville Elem. School	26	2322	7201	89.31	0.32	-4879

Table 2. Total Mold Counts/m3 for the Individual Schools ranked in Descending Order.

School	No. of Obs.	Outside Counts/m3	Inside/Outside Ratio	Ave. Mold Count/m3	Inside Counts/m3	Notes
Maggie Walker School	24	267	217.75	2422.42	58138.08	PROBLEM
Lucille M. Brown Middle School	22	81066	0.59	2169.77	47734.94	PROBLEM
Carver Elementary School	22	13868	2.31	1454.68	32002.96	PROBLEM
Chandler Middle School	18	7000	3.20	1244.56	22402.08	PROBLEM
Swansboro Elem. School	38	6373	2.45	410.63	15603.94	PROBLEM
George Mason Elem. School	31	6880	1.81	401.84	12457.04	PROBLEM
John Marshall High School	35	7442	1.63	346.00	12110.00	PROBLEM
Oak Grove Elem. School	47	8960	1.03	196.36	9228.92	PROBLEM
Elizabeth Reid School	45	8161	1.09	200.33	9014.85	PROBLEM
G.H Reid Elem. School	42	7928	1.12	211.98	8903.16	PROBLEM
J.L Francis Elem. School	17	31468	0.25	455.06	7736.02	PROBLEM
Mosby Middle School	27	22514	0.31	258.74	6985.98	PROBLEM
T.C Boushall Middle School	27	4987	0.91	167.96	4534.92	PROBLEM
John F. Kennedy High School	16	4080	1.07	271.63	4346.08	PROBLEM
Broad rock School	39	2934	1.20	90.41	3525.99	PROBLEM
Summer Hill Elem. School	28	1253	2.32	103.89	2908.92	PROBLEM
Fairfield Court	7	2053	1.31	384.86	2694.02	PROBLEM
Miles Jerome Jones Elem. School	24	2028	1.16	97.75	2346.00	PROBLEM
Woodville Elem. School	26	7201	0.32	89.31	2322.06	PROBLEM
Thompson Middle School	6	320	7.08	377.83	2266.98	PROBLEM
Patrick Henry Elem. School	19	1254	1.77	116.52	2213.88	PROBLEM
Maymont School	33	1920	1.07	62.30	2055.90	PROBLEM
Blackwell Elementary School	16	9	213.44	120.06	1920.96	PROBLEM
Clark Springs Elementary School	18	2028	0.79	89.00	1602.00	PROBLEM
Amelia Street Sch.	24	8776	0.15	56.08	1345.92	PROBLEM
Overby-Sheppard Sch.	17	454	1.81	48.47	823.99	

George Wythe High School	13	691	0.70	37.08	482.04	
Southampton Elem. School	13	587	0.69	31.00	403.00	
Thomas Jefferson School	16	508	0.60	19.00	304.00	
Bellevue School	5	160	1.84	58.80	294.00	
Onslow Minnis Middle School	21	588	0.47	13.14	275.94	
West Over Hills Elem. School	14	680	0.36	17.57	245.98	
Chimborazo Middle School	4	27	7.70	52.00	208.00	
Mary Munford Sch.	20	460	0.41	9.40	188.00	
RTC	19	0	151.00	7.95	151.05	
Adult Career Dev. Center	5	293	0.28	16.20	81.00	
Holton Elem. School	20	160	0.41	3.25	65.00	
Albert Norell V	15	44	1.41	4.13	61.95	
Ginter Park Elem. School	15	18	2.50	3.00	45.00	
John B. Cary	15	3	14.33	2.87	43.05	
Preschool Dev. Center	12	66	0.53	2.92	35.04	
Fox Williams Elem. School	5	18	0.28	1.00	5.00	
J.B Fischer Elem. School	0	Medium	1.00	0.00	0.00	

Table 3. Total Counts/m3 for the Types of Fungal Spores Identified by the Air-O-Cell Method ranked in Descending Order.

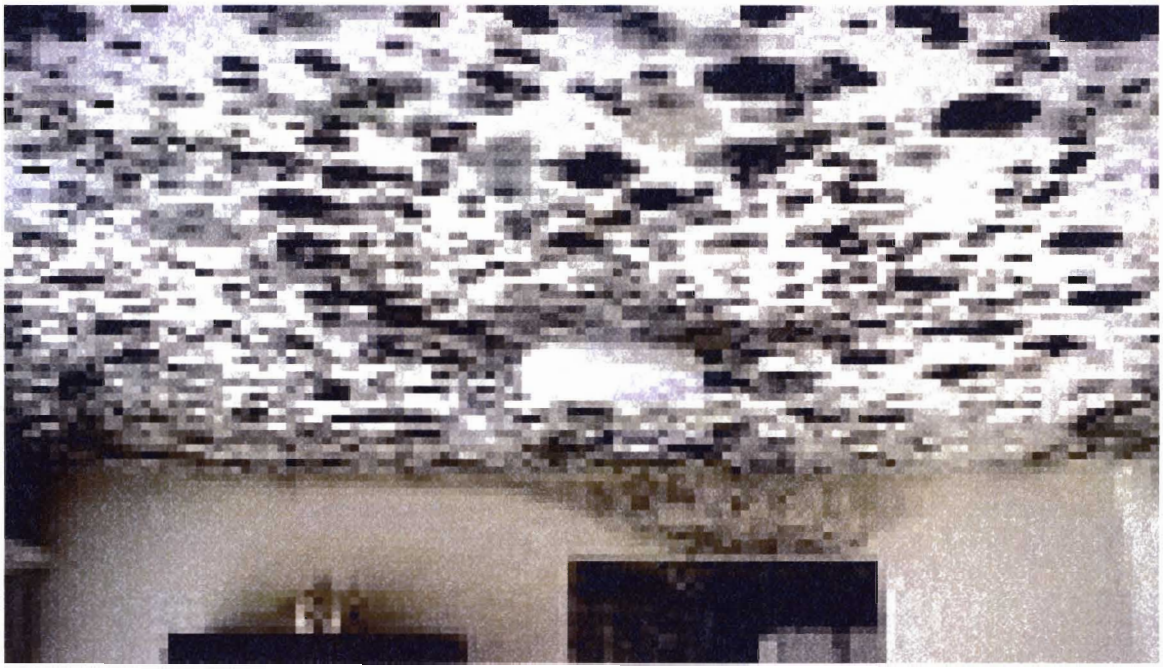
Type of Fungal Spore Identified	No. of Observations	Total Counts/m3
Cladosporium	149	78291.00
Ascospores	120	65350.00
Basidiospores	133	63811.00
Leptodontidium	64	24110.00
Aspergillus/Penicillium	80	18613.00
Myxomycetes	56	10115.00
Epicoccum	62	6733.00
Alternaria	44	5110.00
Pen/Asp-Type	36	2251.00
Bipolaris/Drechslera	24	1845.00
Curvularia	19	972.00
Rusts	8	435.00
Periconia	8	427.00
Polythrincium	3	321.00
Pithomyces	10	270.00
Bispora	1	267.00
Oidium/Peronospora	1	267.00
Smuts	7	241.00
Paecilomyces	4	111.00
Chaetomium	6	110.00
Stachybotrys	3	55.00
Arthrinium	2	54.00
Aspergillus	1	53.00
Periconia/Smuts	9	34.00
Botrytis	1	27.00
Cercospora	1	27.00
Exosporiella	1	27.00
Fusarium	1	27.00
Nigrospora	1	27.00
Pseudocercospora	1	27.00
Sporidesmium	1	27.00
Torula	1	27.00
Ulocladium	1	27.00
Periconia/Smuts/Myxo	13	22.00
Unidentified	3	3.00

Table 4. A Representation of Individual Schools, Inside Mold Counts/m3, Outside Mold Counts/m3 and the Ratio of Inside Mold Counts/m3 to Outside Mold Counts/m3.

School	No. of Obs.	Inside Counts/m3	Outside Counts/m3	Ave. Mold Count/m3	Inside/Outside Ratio	NOTES
Maggie Walker School	24	58138	267	2422.42	217.75	PROBLEM
Blackwell Elem. School	16	1921	9	120.06	213.44	PROBLEM
RTC	19	151	1	7.95	151.00	PROBLEM
John B. Cary	15	43	3	2.87	14.33	PROBLEM
Chimborazo Elem. School	4	208	27	52	7.70	PROBLEM
Thompson Middle School	6	2267	320	377.83	7.08	PROBLEM
Chandler Middle School	18	22402	7000	1244.56	3.20	PROBLEM
Ginter Park Elem. School	15	45	18	3	2.50	PROBLEM
Swansboro Elem. School	38	15604	6373	410.63	2.45	PROBLEM
Summer Hill Elem. School	28	2909	1253	103.89	2.32	PROBLEM
Carver Elem. School	22	32003	13868	1454.68	2.31	PROBLEM
Bellevue School	5	294	160	58.8	1.84	PROBLEM
George Mason Elem. School	31	12457	6880	401.84	1.81	PROBLEM
Overby-Sheppard School	17	824	454	48.47	1.81	PROBLEM
Patrick Henry Elem. School	19	2214	1254	116.52	1.77	PROBLEM
John Marshall High School	35	12110	7442	346	1.63	PROBLEM
Albert Norell V	15	62	44	4.13	1.41	PROBLEM
Fairfield Court	7	2694	2053	384.86	1.31	PROBLEM
Broadrock School	39	3526	2934	90.41	1.20	PROBLEM
Miles Jerome Jones Elem. School	24	2346	2028	97.75	1.16	PROBLEM
G.H Reid Elem. School	42	8903	7928	211.98	1.12	PROBLEM
Elizabeth Reid School	45	8871	8161	200.33	1.09	PROBLEM
John F. Kennedy High School	16	4346	4080	271.63	1.07	PROBLEM
Maymont School	33	2056	1920	62.3	1.07	PROBLEM
Oak Grove Elem. School	47	9239	8960	196.36	1.03	PROBLEM
*J.B Fischer Elem. School	0	Low	Medium	0	1.00	
T.C Boushall Middle	27	4535	4987	167.96	0.91	

Clark Springs Elem. School	18	1602	2028	89	0.79	
George Wythe Elem. School	13	482	691	37.08	0.70	
Southampton Elem. School	13	403	587	31	0.69	
Thomas Jefferson School	16	304	508	19	0.60	
Lucile M.Brown Middle School	22	47735	81066	2169.77	0.59	
Preschool Dev. Center	12	35	66	2.92	0.53	
Onslow Minnis Middle School	21	276	588	13.14	0.47	
Holton Elem. School	20	65	160	3.25	0.41	
Mary Munford School	20	188	460	9.4	0.41	
Westover Hills Elem. School	14	246	680	17.57	0.36	
Woodville Elem. School	26	2322	7201	89.31	0.32	
Mosby Middle School	27	6986	22514	258.74	0.31	
Adult Career Dev. Center	5	81	293	16.2	0.28	
Fox Williams Elem. School	5	5	18	1	0.28	
J.L Francis Elem. School	17	7736	31468	455.06	0.25	
Amelia Street School	24	1346	8776	56.08	0.15	

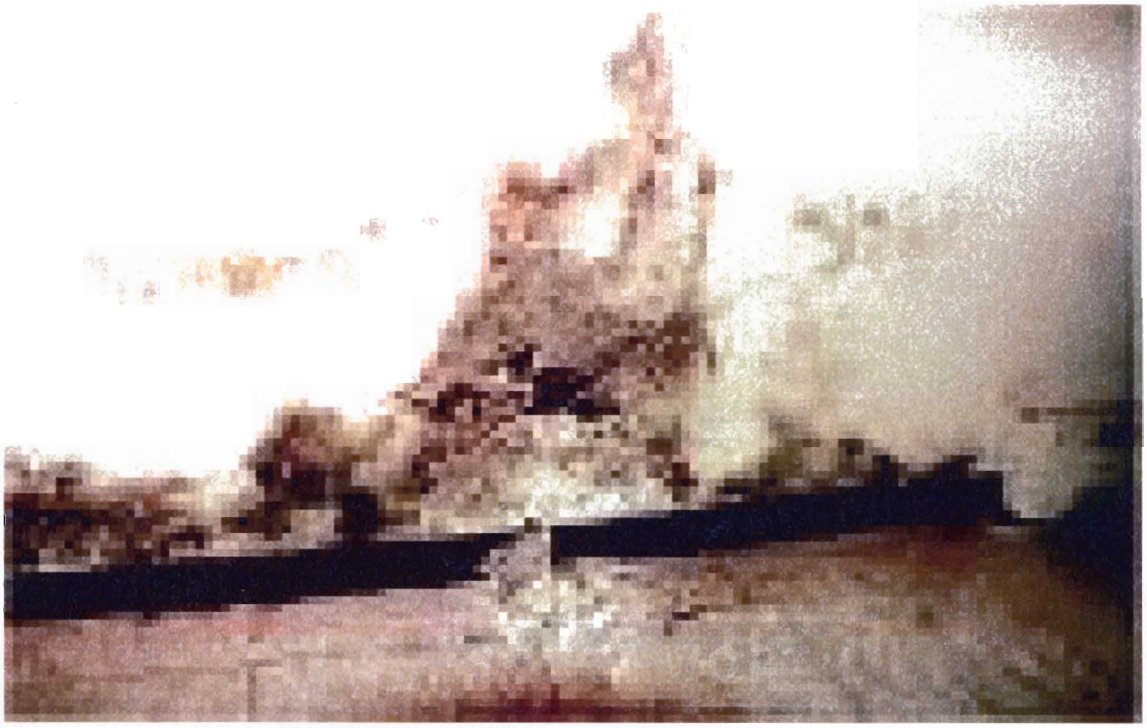
Figure 1. Photographs of Mold-Impacted Surfaces



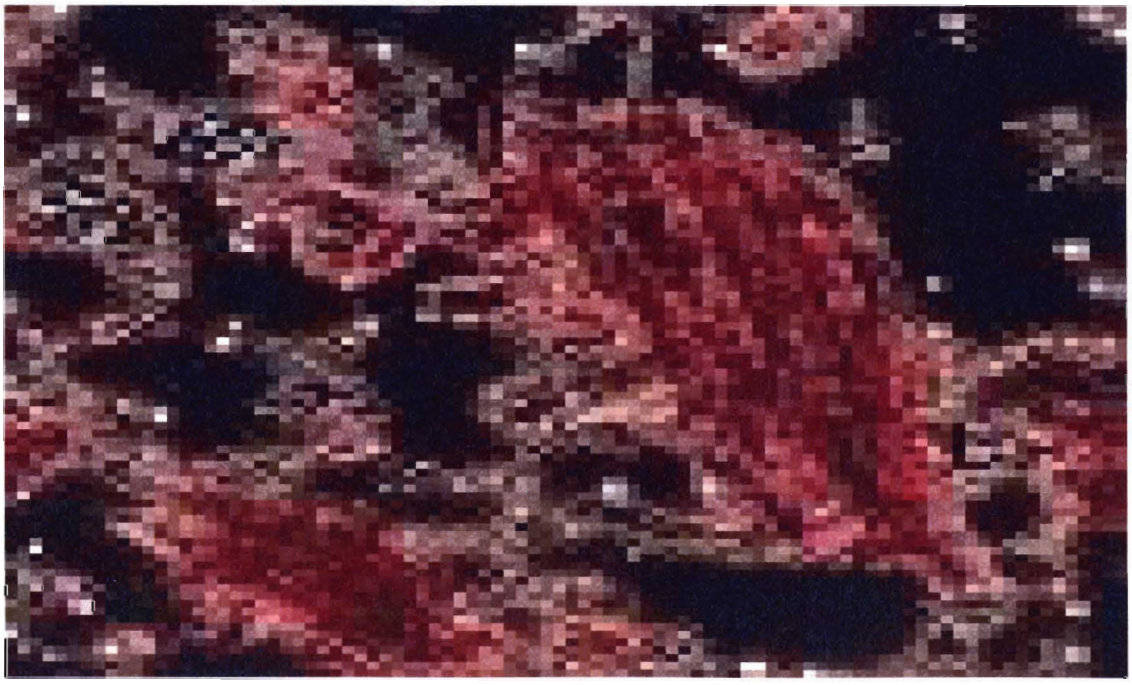
MOLD GROWTH ON A CEILING

MOLD GROWTH INSIDE AN ATTIC

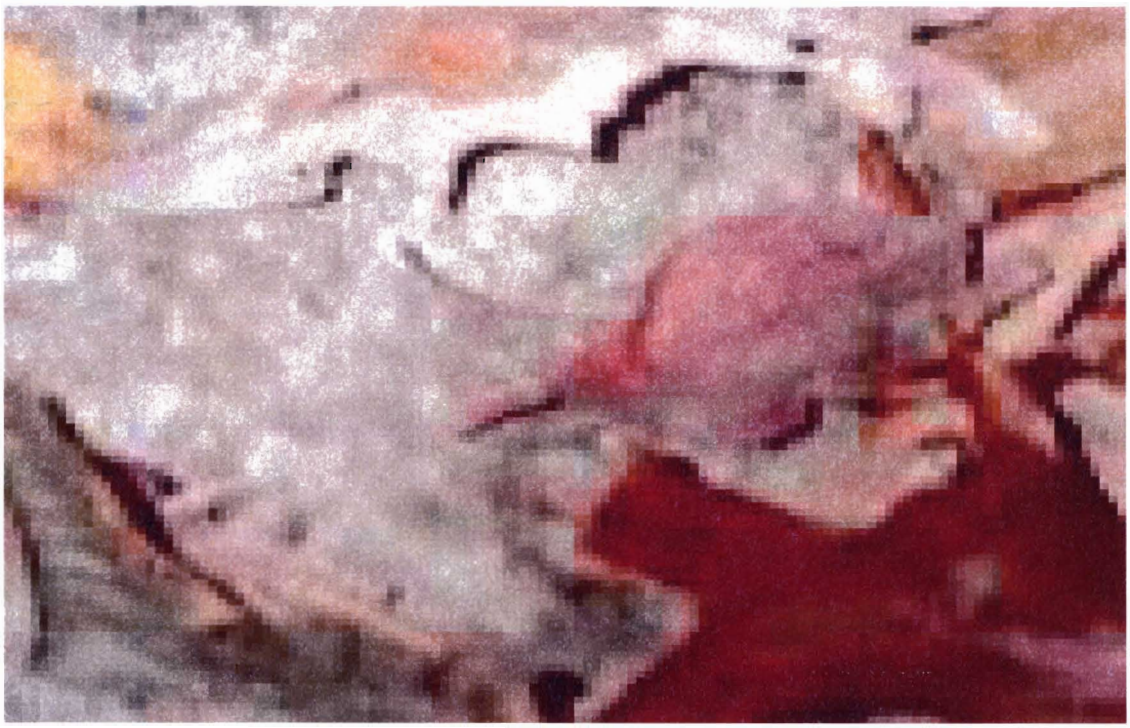
MOLD MUSHROOMS GROWING IN A WALL



MOLD ON A WALL AND FLOOR IN A ROOM

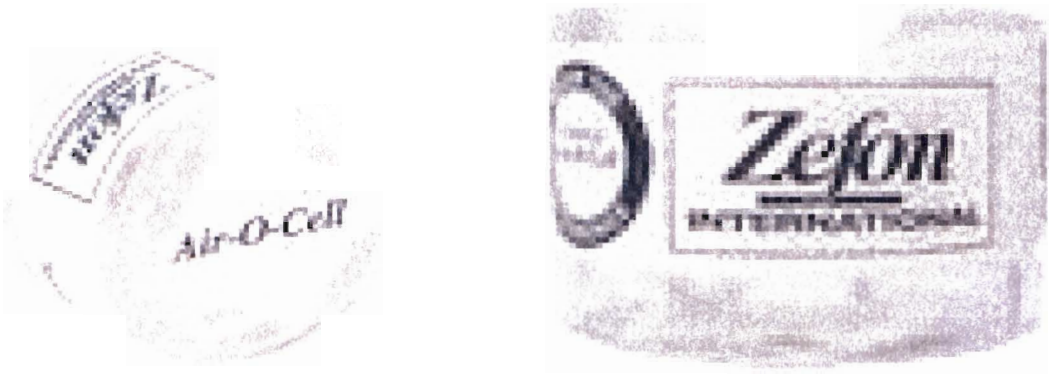


TOXIC BLACK MOLDS

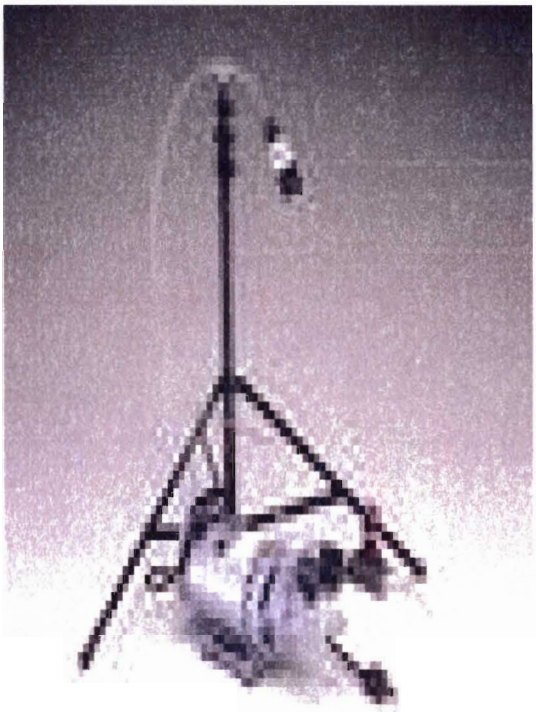


MOLD AND MILDEW

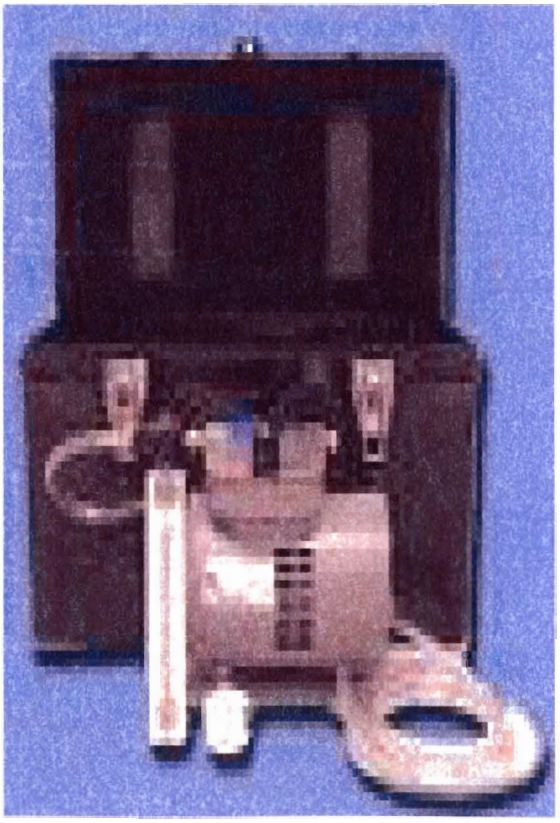
Figure 2. Air-O-Cell Sampling Equipment



AIR-O-CELL SAMPLING CASSETTES



AIR SAMPLING PUMP WITH STAND



AIR-O-CELL KIT

Figure 3. Swab Sampling Equipment

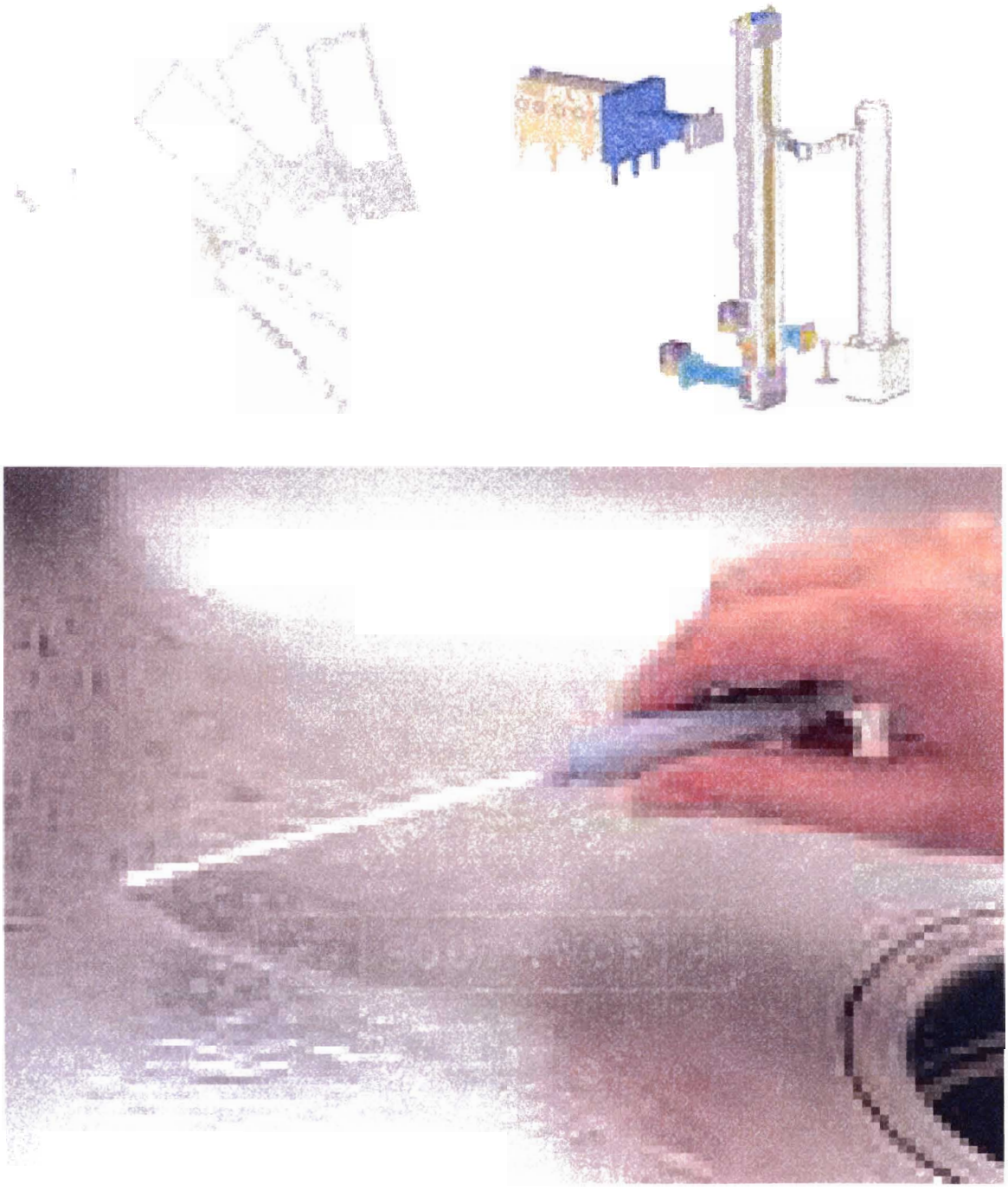


Figure 4. Biotape Sampling Equipment

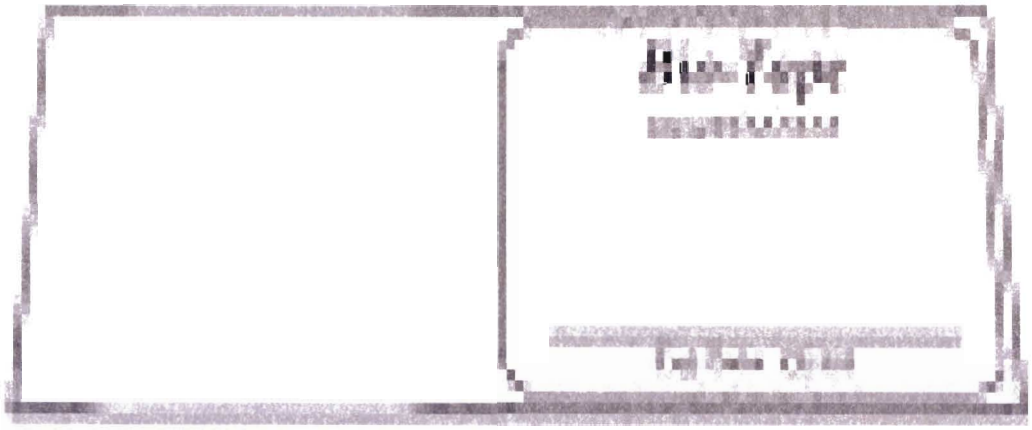


Figure 5. Photographs of a Mold Remediation Project

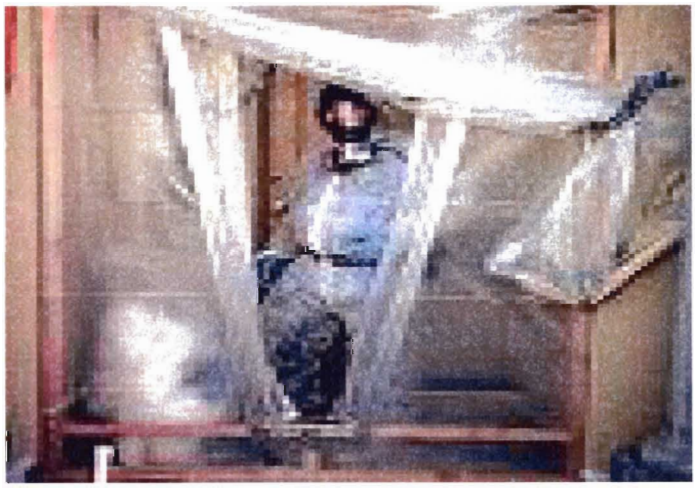


Figure 6. Personal Protective Equipment for Mold Remediation

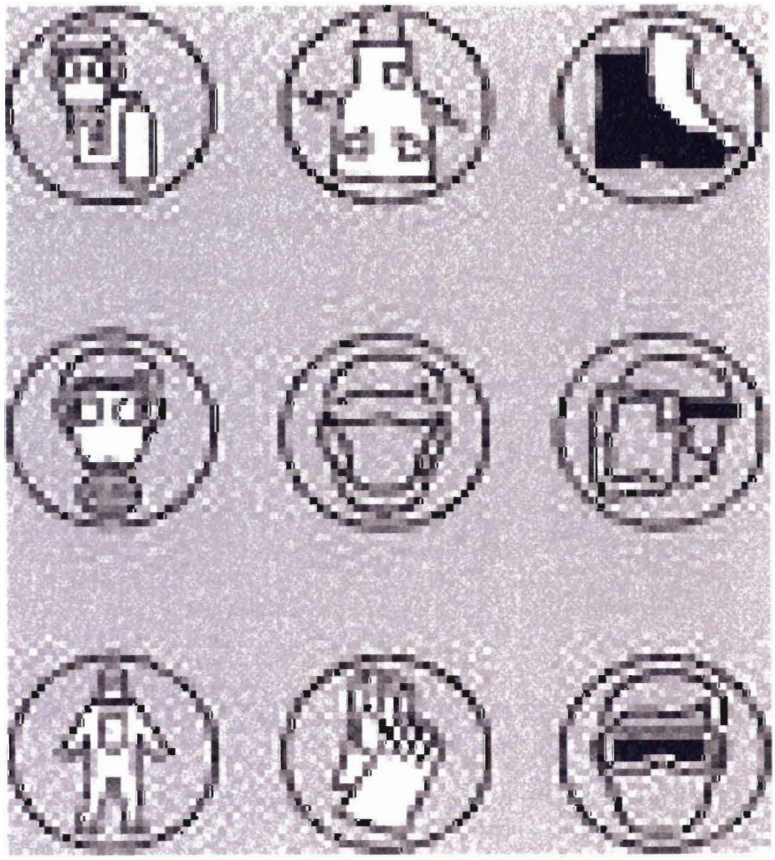
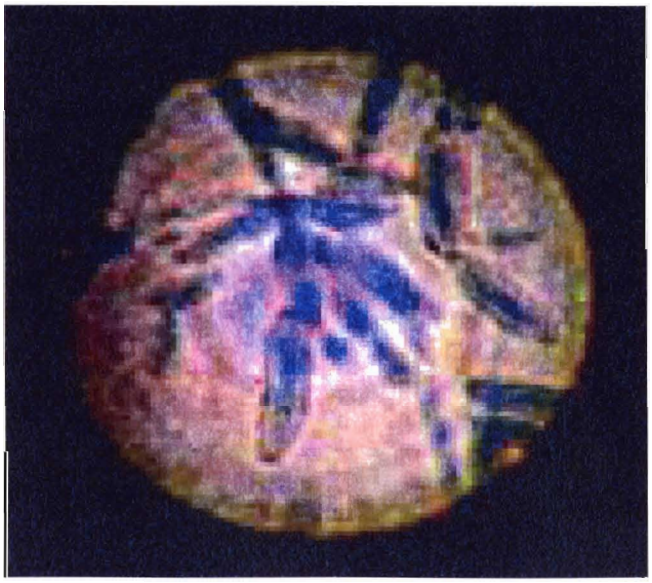


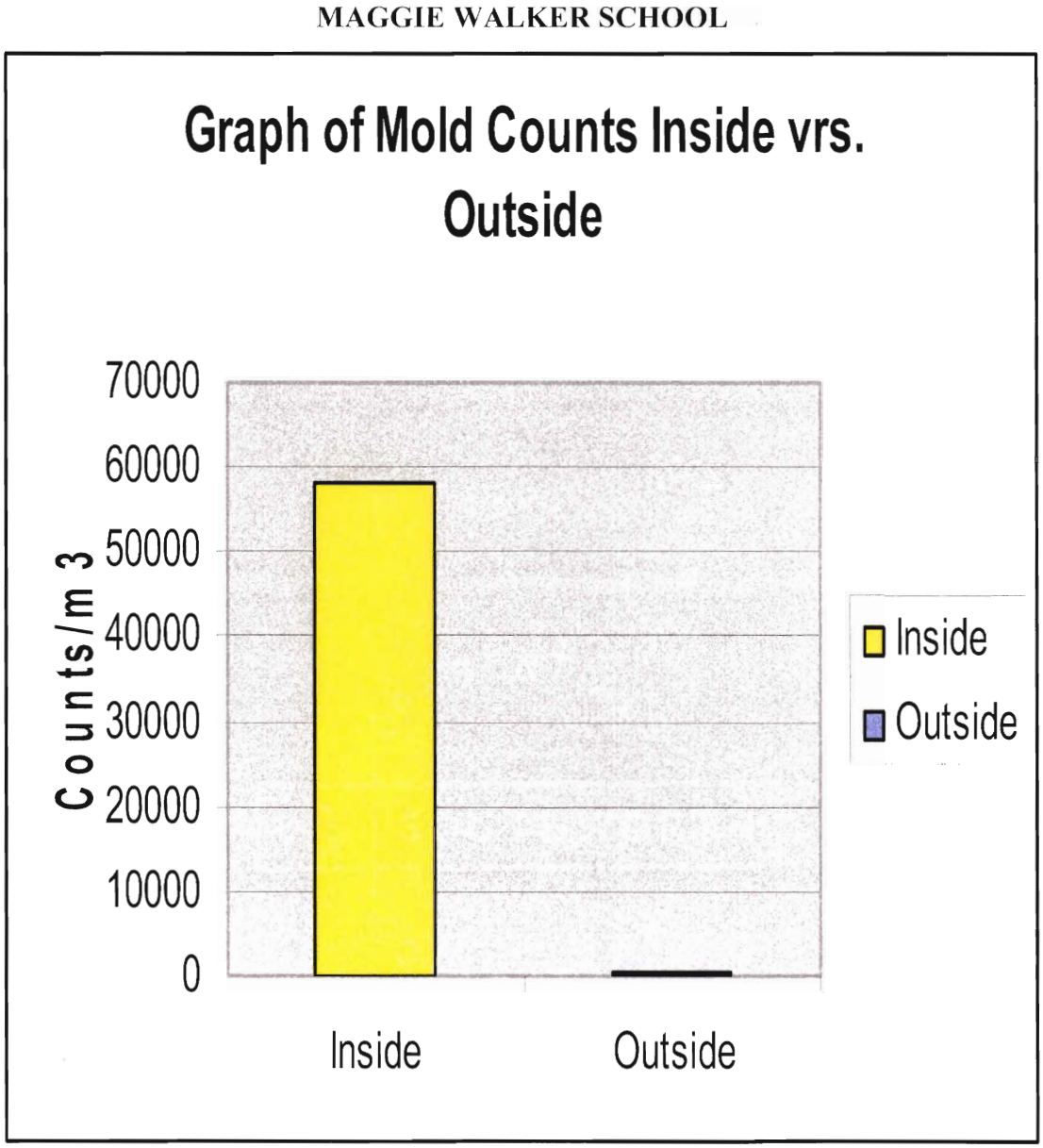
Figure 7. Photograph of a Mold Analysis in the Laboratory

LABORATORY TECHNICIAN VIEWS A MOLD SPECIMEN UNDER A MICROSCOPE

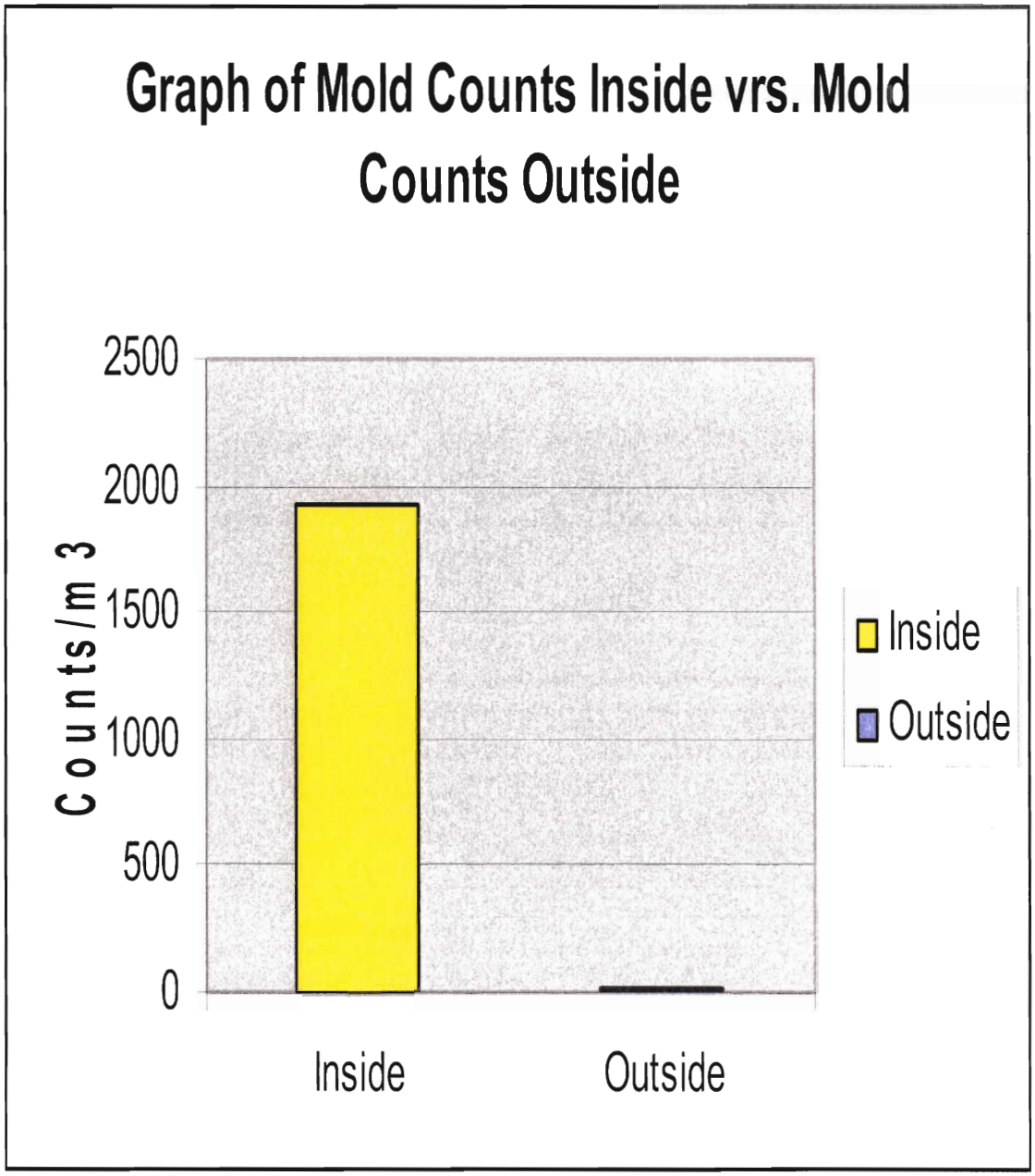


RESULTS FROM A MOLD SAMPLE

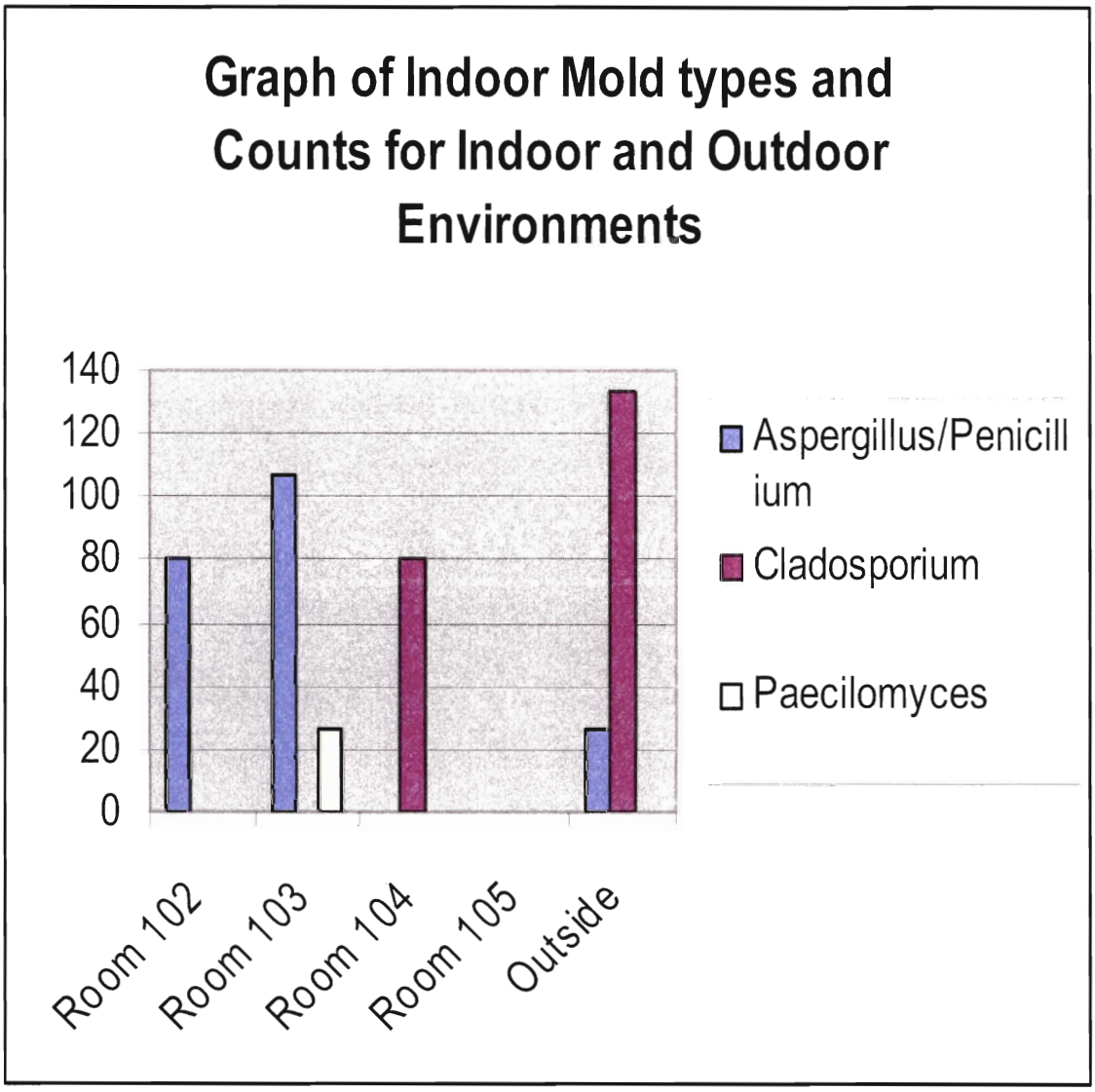
Figure 8. Graphical Representation of Laboratory Results for some of the Schools that could be faced with Mold Problems



BLACKWELL ELEMENTARY SCHOOL



BELLEVUE SCHOOL



Appendix 1

The data for Air-O-Cell Samples collected for the Indoor and Outdoor Environments

School	Sample Number	Sample Room	Fungal Spore Id.	Count
Adult Career Dev. Center	650-6921	106	*ND*	0
Adult Career Dev. Center	650-6924	112	*Basidiospores*	27
Adult Career Dev. Center	650-6930	101	*ND*	0
Adult Career Dev. Center	650-6941	201	*Paecilomyces sp.*	27
Adult Career Dev. Center	650-6957	555	*Ascospores*	133
Adult Career Dev. Center	650-6957	555	*Aspergillus/Penicillium*	27
Adult Career Dev. Center	650-6957	555	*Leptodontidium sp.*	80
Adult Career Dev. Center	650-6957	555	*Paecilomyces sp.*	53
Adult Career Dev. Center	650-6969	105	*Aspergillus/Penicillium*	27
Albert Norell V	48-5882	201	*Pen/Asp-Type*	16
Albert Norell V	48-5882	201	*Periconia/Smuts/Myxo*	2
Albert Norell V	48-5882	204	*Ascospores*	4
Albert Norell V	48-5882	204	*Cladosporium sp.*	12
Albert Norell V	48-5882	204	*Pen/Asp-Type*	4
Albert Norell V	48-5882	205	*Cladosporium sp.*	2
Albert Norell V	48-5882	205	*Pen/Asp-Type*	2
Albert Norell V	48-5882	205	*Periconia/Smuts/Myxo*	1
Albert Norell V	48-5882	207	*Ascospores*	2
Albert Norell V	48-5882	207	*Basidiospores*	1
Albert Norell V	48-5882	207	*Cladosporium sp.*	4
Albert Norell V	48-5882	207	*Pen/Asp-Type*	5
Albert Norell V	48-5882	208	*Ascospores*	1
Albert Norell V	48-5882	208	*Cladosporium sp.*	4
Albert Norell V	48-5882	208	*Pen/Asp-Type*	2
Albert Norell V	48-5882	555	*Ascospores*	20
Albert Norell V	48-5882	555	*Cladosporium sp.*	8
Albert Norell V	48-5882	555	*Pen/Asp-Type*	16
Amelia Street School	7019070	113	*Ascospores*	80
Amelia Street School	7019070	113	*Aspergillus/Penicillium*	80
Amelia Street School	7019070	113	*Basidiospores*	53

Amelia Street School	7019070	113	*Cladosporium sp.*	133
Amelia Street School	7019072	108	*Ascospores*	53
Amelia Street School	7019072	108	*Basidiospores*	53
Amelia Street School	7019072	108	*Cladosporium sp.*	27
Amelia Street School	7019072	108	*Epicoccum*	27
Amelia Street School	7019072	108	*Rusts*	27
Amelia Street School	7019074	110	*Ascospores*	53
Amelia Street School	7019074	110	*Basidiospores*	27
Amelia Street School	7019074	110	*Pithomyces sp.*	27
Amelia Street School	7019074	110	*Rusts*	27
Amelia Street School	7019082	102	*Ascospores*	27
Amelia Street School	7019082	102	*Basidiospores*	27
Amelia Street School	7019082	102	*Cladosporium sp.*	27
Amelia Street School	7094364	555	*Alternaria*	27
Amelia Street School	7094364	555	*Ascospores*	2000
Amelia Street School	7094364	555	*Aspergillus/Penicillium*	507
Amelia Street School	7094364	555	*Basidiospores*	2000
Amelia Street School	7094364	555	*Cladosporium sp.*	2000
Amelia Street School	7094364	555	*Curvularia sp.*	27
Amelia Street School	7094364	555	*Epicoccum*	107
Amelia Street School	7094364	555	*Fusicladium*	27
Amelia Street School	7094364	555	*Leptodontidium sp.*	2000
Amelia Street School	7094364	555	*Myxomycetes*	27
Amelia Street School	7094364	555	*Rusts*	27
Amelia Street School	7094364	555	*Torula sp.*	27
Amelia Street School	7094371	107	*Ascospores*	103
Amelia Street School	7094371	107	*Aspergillus/Penicillium*	62
Amelia Street School	7094371	107	*Basidiospores*	226
Amelia Street School	7094371	107	*Bipolaris/Drechslera*	21
Amelia Street School	7094371	107	*Cladosporium sp.*	123
Amelia Street School	7094371	107	*Epicoccum*	21
Amelia Street School	7094371	107	*Myxomycetes*	21
Amelia Street School	7094371	107	*Rusts*	21
Bellevue School	6514418	105	*ND*	0
Bellevue School	6514423	103	*Aspergillus/Penicillium*	107
Bellevue School	6514423	103	*Paecilomyces sp.*	27
Bellevue School	6514446	555	*Aspergillus/Penicillium*	27
Bellevue School	6514446	555	*Cladosporium sp.*	133
Bellevue School	6514447	102	*Aspergillus/Penicillium*	80
Bellevue School	6514448	104	*Cladosporium sp.*	80
Blackwell Elementary School	48-5882	103	*Pen/Asp-Type*	3

Blackwell Elementary School	48-5882	103	*Periconia/Smuts/Myxo*	1
Blackwell Elementary School	48-5882	116	*Cladosporium sp.*	8
Blackwell Elementary School	48-5882	116	*Pen/Asp-Type*	1860
Blackwell Elementary School	48-5882	119	*Ascospores*	1
Blackwell Elementary School	48-5882	119	*Cladosporium sp.*	2
Blackwell Elementary School	48-5882	119	*Pen/Asp-Type*	28
Blackwell Elementary School	48-5882	119	*Periconia/Smuts/Myxo*	1
Blackwell Elementary School	48-5882	208	*Chaetomium*	1
Blackwell Elementary School	48-5882	208	*Cladosporium sp.*	1
Blackwell Elementary School	48-5882	212	*Ascospores*	3
Blackwell Elementary School	48-5882	212	*Basidiospores*	1
Blackwell Elementary School	48-5882	212	*Cladosporium sp.*	7
Blackwell Elementary School	48-5882	212	*Epicoccum*	1
Blackwell Elementary School	48-5882	212	*Pen/Asp-Type*	2
Blackwell Elementary School	48-5882	212	*Unidentified Spores*	1
Blackwell Elementary School	48-5882	555	*Ascospores*	5
Blackwell Elementary School	48-5882	555	*Pen/Asp-Type*	2
Blackwell Elementary School	48-5882	555	*Periconia/Smuts/Myxo*	2
Broadrock School	6506950	109	*Alternaria*	27
Broadrock School	6506950	109	*Ascospores*	27
Broadrock School	6506950	109	*Aspergillus/Penicillium*	80
Broadrock School	6506950	109	*Basidiospores*	27
Broadrock School	6506950	109	*Cladosporium sp.*	320
Broadrock School	6506950	109	*Curvularia*	27
Broadrock School	6506950	109	*Leptodontidium sp.*	27

Broadrock School	6514409	555	*Alternaria*	27
Broadrock School	6514409	555	*Ascospores*	133
Broadrock School	6514409	555	*Aspergillus/Penicillium*	80
Broadrock School	6514409	555	*Basidiospores*	373
Broadrock School	6514409	555	*Cladosporium sp.*	133
Broadrock School	6514409	555	*Epicoccum*	27
Broadrock School	6514409	555	*Leptodontidium sp.*	347
Broadrock School	6514428	111	*Ascospores*	213
Broadrock School	6514428	111	*Aspergillus/Penicillium*	27
Broadrock School	6514428	111	*Basidiospores*	160
Broadrock School	6514428	111	*Cladosporium sp.*	107
Broadrock School	6514428	111	*Leptodontidium sp.*	27
Broadrock School	6514428	111	*Myxomycetes*	27
Broadrock School	6514435	Auditorium	*Alternaria*	27
Broadrock School	6514435	Auditorium	*Ascospores*	27
Broadrock School	6514435	Auditorium	*Aspergillus/Penicillium*	133
Broadrock School	6514435	Auditorium	*Basidiospores*	187
Broadrock School	6514435	Auditorium	*Bipolaris/Drechslera*	27
Broadrock School	6514435	Auditorium	*Cladosporium sp.*	373
Broadrock School	6514435	Auditorium	*Curvularia*	107
Broadrock School	6514435	Auditorium	*Epicoccum*	267
Broadrock School	6514435	Auditorium	*Leptodontidium sp.*	80
Broadrock School	6514435	Auditorium	*Myxomycetes*	347
Broadrock School	6514435	Auditorium	*Nigrospora*	27
Broadrock School	6514442	206	*Aspergillus/Penicillium*	53
Broadrock School	6514442	206	*Basidiospores*	107
Broadrock School	6514442	206	*Bipolaris/Drechslera*	27
Broadrock School	6514442	206	*Cladosporium sp.*	240
Broadrock School	6514442	206	*Curvularia*	53
Broadrock School	6514442	206	*Epicoccum*	53
Broadrock School	6514442	206	*Leptodontidium sp.*	53
Broadrock School	6514480	Main Office	*Ascospores*	27
Broadrock School	6514480	Main Office	*Aspergillus/Penicillium*	27
Broadrock School	6514480	Main Office	*Basidiospores*	27
Broadrock School	6514480	Main Office	*Cladosporium sp.*	27
Broadrock School	6514480	Main Office	*Curvularia*	27
Broadrock School	6514480	Main Office	*Leptodontidium sp.*	53
Broadrock School	6514480	Main Office	*Myxomycetes*	27
Broadrock School	6514480	Main Office	*Pithomyces*	27
Broadrock School	6514990	555	*Ascospores*	507
Broadrock School	6514990	555	*Basidiospores*	427
Broadrock School	6514990	555	*Bipolaris/Drechslera*	27

Broadrock School	6514990	555	*Chaetomium sp.*	27
Broadrock School	6514990	555	*Cladosporium sp.*	400
Broadrock School	6514990	555	*Epicoccum*	53
Broadrock School	6514990	555	*Leptodontidium sp.*	213
Broadrock School	6514990	555	*Myxomycetes*	107
Broadrock School	6514990	555	*Rusts*	53
Carver Elementary School	6895405	106	*Ascospores*	800
Carver Elementary School	6895405	106	*Cladosporium sp.*	1333
Carver Elementary School	6895405	106	*Myxomycetes*	267
Carver Elementary School	6895409	103	*Alternaria*	267
Carver Elementary School	6895409	103	*Ascospores*	267
Carver Elementary School	6895409	103	*Aspergillus/Penicillium*	533
Carver Elementary School	6895409	103	*Basidiospores*	267
Carver Elementary School	6895409	103	*Cladosporium sp.*	4800
Carver Elementary School	6895409	103	*Myxomycetes*	800
Carver Elementary School	6895412	3D	*Basidiospores*	267
Carver Elementary School	6895412	3D	*Cladosporium sp.*	1867
Carver Elementary School	6895413	102	*Ascospores*	1867
Carver Elementary School	6895413	102	*Aspergillus/Penicillium*	800
Carver Elementary School	6895413	102	*Basidiospores*	1867
Carver Elementary School	6895413	102	*Cladosporium sp.*	12533
Carver Elementary School	6895413	102	*Epicoccum*	267
Carver Elementary School	6895413	102	*Leptodontidium sp.*	267
Carver Elementary School	6895421	555	*Alternaria*	267
Carver Elementary	6895421	555	*Ascospores*	5600

Carver Elementary School	6895421	555	*Basidiospores*	2667
Carver Elementary School	6895421	555	*Cladosporium sp.*	3200
Carver Elementary School	6895421	555	*Epicoccum*	267
Carver Elementary School	6895421	555	*Leptodontidium sp.*	800
Carver Elementary School	6895421	555	*Myxomycetes*	267
Carver Elementary School	6895421	555	*Oidium/Peronospora*	533
Carver Elementary School	6895421	555	*Pithomyces sp.*	267
Carver Elementary School	6895423	3A	*Ascospores*	1067
Carver Elementary School	6895423	3A	*Aspergillus/Penicillium*	267
Carver Elementary School	6895423	3A	*Basidiospores*	533
Carver Elementary School	6895423	3A	*Cladosporium sp.*	800
Carver Elementary School	6895423	3A	*Leptodontidium sp.*	267
Chandler Middle School	6514335	Auditorium	*Ascospores*	3733
Chandler Middle School	6514335	Auditorium	*Aspergillus/Penicillium*	800
Chandler Middle School	6514335	Auditorium	*Basidiospores*	4000
Chandler Middle School	6514335	Auditorium	*Cladosporium sp.*	3200
Chandler Middle School	6514335	Auditorium	*Leptodontidium sp.*	800
Chandler Middle School	6514335	Auditorium	*Myxomycetes*	267
Chandler Middle School	6514349	203	*Ascospores*	1067
Chandler Middle School	6514349	203	*Basidiospores*	1333
Chandler Middle School	6514349	203	*Cladosporium sp.*	267
Chandler Middle	6514349	203	*Leptodontidium sp.*	267

Chandler Middle School	6514349	203	*Myxomycetes*	267
Chandler Middle School	6514385	202	*Ascospores*	533
Chandler Middle School	6514385	202	*Aspergillus/Penicillium*	1067
Chandler Middle School	6514385	202	*Basidiospores*	267
Chandler Middle School	6514385	202	*Cladosporium sp.*	267
Chandler Middle School	6514385	202	*Myxomycetes*	267
Chandler Middle School	6895424	204	*Basidiospores*	1067
Chandler Middle School	6895424	204	*Cladosporium sp.*	2933
Chandler Middle School	7019069	555	*Alternaria*	67
Chandler Middle School	7019069	555	*Ascospores*	2333
Chandler Middle School	7019069	555	*Aspergillus/Penicillium*	133
Chandler Middle School	7019069	555	*Basidiospores*	2733
Chandler Middle School	7019069	555	*Bipolaris/Drechslera*	67
Chandler Middle School	7019069	555	*Cladosporium sp.*	1200
Chandler Middle School	7019069	555	*Epicoccum*	133
Chandler Middle School	7019069	555	*Myxomycetes*	267
Chandler Middle School	7019069	555	*Pithomyces sp.*	67
Chimborazo Elem. School	6514416	Gym	*Aspergillus/Penicillium*	107
Chimborazo Elem. School	6514416	Gym	*Paecilomyces sp.*	53
Chimborazo Elem. School	6514422	555	*Aspergillus/Penicillium*	27
Chimborazo Elem.	6514430	Cafeteria	*Pithomyces*	27
Chimborazo Elem. School	6514434	121	*Aspergillus/Penicillium*	21

Clark Springs Elem. School	6506927	108	*Ascospores*	80
Clark Springs Elem. School	6506927	108	*Basidiospores*	53
Clark Springs Elem. School	6506927	108	*Cladosporium sp.*	107
Clark Springs Elem. School	6506927	108	*Myxomycetes*	27
Clark Springs Elem. School	6506927	108	*Periconia sp.*	27
Clark Springs Elem. School	6514331	555	*Alternaria*	27
Clark Springs Elem. School	6514331	555	*Ascospores*	240
Clark Springs Elem. School	6514331	555	*Aspergillus/Penicillium*	107
Clark Springs Elem. School	6514331	555	*Basidiospores*	213
Clark Springs Elem. School	6514331	555	*Bipolaris/Drechslera*	27
Clark Springs Elem. School	6514331	555	*Cercospora sp.*	27
Clark Springs Elem. School	6514331	555	*Cladosporium sp.*	1120
Clark Springs Elem. School	6514331	555	*Curvularia*	27
Clark Springs Elem. School	6514331	555	*Epicoccum*	53
Clark Springs Elem. School	6514331	555	*Fusarium*	27
Clark Springs Elem. School	6514331	555	*Fusicladium sp.*	27
Clark Springs Elem. School	6514331	555	*Leptodontidium sp.*	80
Clark Springs Elem. School	6514331	555	*Myxomycetes*	27
Clark Springs Elem. School	6514331	555	*Periconia*	27
Clark Springs Elem. School	6514331	555	*Pollythrincium*	53
Clark Springs Elem. School	6514331	555	*Pseudocercospora sp.*	27
Clark Springs Elem.	6514333	113	*Alternaria*	27

Clark Springs Elem. School	6514333	113	*Cladosporium sp.*	747
Clark Springs Elem. School	6514333	113	*Epicoccum*	27
Clark Springs Elem. School	6514333	113	*Periconia sp.*	27
Clark Springs Elem. School	6514359	120	*Ascospores*	27
Clark Springs Elem. School	6514359	120	*Aspergillus/Penicillium*	53
Clark Springs Elem. School	6514359	120	*Basidiospores*	53
Clark Springs Elem. School	6514359	120	*Cladosporium sp.*	133
Clark Springs Elem. School	6514359	120	*Epicoccum*	27
Clark Springs Elem. School	6514359	120	*Periconia*	27
Clark Springs Elem. School	6514359	120	*Smuts*	27
Clark Springs Elem. School	6514387	Media Room	*Aspergillus/Penicillium*	53
Clark Springs Elem. School	6514387	Media Room	*Cladosporium sp.*	80
Elizabeth Reid School	6514332	10	*Alternaria sp.*	27
Elizabeth Reid School	6514332	10	*Ascospores*	373
Elizabeth Reid School	6514332	10	*Aspergillus/Penicillium*	133
Elizabeth Reid School	6514332	10	*Basidiospores*	160
Elizabeth Reid School	6514332	10	*Cladosporium sp.*	773
Elizabeth Reid School	6514332	10	*Epicoccum sp.*	53
Elizabeth Reid School	6514332	10	*Leptodontidium sp.*	53
Elizabeth Reid Sch.	6514336	11	*Ascospores*	480
Elizabeth Reid School	6514336	11	*Aspergillus/Penicillium*	80
Elizabeth Reid School	6514336	11	*Basidiospores*	160
Elizabeth Reid School	6514336	11	*Cladosporium sp.*	853
Elizabeth Reid School	6514336	11	*Epicoccum sp.*	53
Elizabeth Reid School	6514336	11	*Myxomycetes*	27
Elizabeth Reid School	6514344	9	*Alternaria sp.*	53
Elizabeth Reid School	6514344	9	*Ascospores*	507
Elizabeth Reid School	6514344	9	*Aspergillus/Penicillium*	1040
Elizabeth Reid School	6514344	9	*Basidiospores*	80
Elizabeth Reid School	6514344	9	*Bipolaris/Drechslera*	27
Elizabeth Reid School	6514344	9	*Cladosporium sp.*	933

Elizabeth Reid School	6514344	9	*Epicoccum sp.*	160
Elizabeth Reid School	6514344	9	*Leptodontidium sp.*	80
Elizabeth Reid School	6514344	9	*Myxomycetes*	107
Elizabeth Reid School	6514344	9	*Smuts*	27
Elizabeth Reid School	6514346	5	*Alternaria sp.*	27
Elizabeth Reid School	6514346	5	*Ascospores*	773
Elizabeth Reid School	6514346	5	*Aspergillus/Penicillium*	213
Elizabeth Reid School	6514346	5	*Basidiospores*	160
Elizabeth Reid School	6514346	5	*Bipolaris/Drechslera*	27
Elizabeth Reid School	6514346	5	*Cladosporium sp.*	293
Elizabeth Reid School	6514346	5	*Epicoccum sp.*	27
Elizabeth Reid School	6514346	5	*Leptodontidium sp.*	240
Elizabeth Reid Sch.	6514346	5	*Myxomycetes*	27
Elizabeth Reid School	6514346	5	*Pithomyces sp.*	27
Elizabeth Reid School	6514358	555	*Alternaria sp.*	107
Elizabeth Reid School	6514358	555	*Ascospores*	2000
Elizabeth Reid School	6514358	555	*Basidiospores*	2000
Elizabeth Reid School	6514358	555	*Cladosporium sp.*	1840
Elizabeth Reid School	6514358	555	*Epicoccum sp.*	53
Elizabeth Reid School	6514358	555	*Fusicladium sp.*	27
Elizabeth Reid School	6514358	555	*Leptodontidium sp.*	2000
Elizabeth Reid School	6514358	555	*Myxomycetes*	27
Elizabeth Reid School	6514358	555	*Periconia sp.*	53
Elizabeth Reid School	6514358	555	*Pithomyces sp.*	27
Elizabeth Reid School	6514358	555	*Polythrincium sp.*	27
Elizabeth Reid School	6514360	2	*Alternaria sp.*	27
Elizabeth Reid School	6514360	2	*Ascospores*	293
Elizabeth Reid School	6514360	2	*Aspergillus/Penicillium*	53
Elizabeth Reid School	6514360	2	*Basidiospores*	27
Elizabeth Reid School	6514360	2	*Bipolaris/Drechslera*	27
Elizabeth Reid School	6514360	2	*Botrytis sp.*	27
Elizabeth Reid Sch.	6514360	2	*Cladosporium sp.*	347
Elizabeth Reid School	6514360	2	*Curvularia sp.*	27
Elizabeth Reid School	6514360	2	*Epicoccum sp.*	27
Elizabeth Reid School	6514360	2	*Fusarium*	27
Elizabeth Reid School	6514360	2	*Leptodontidium sp.*	53
Elizabeth Reid School	6514360	2	*Myxomycetes*	27
Fairfield Court	6506913	113	*Aspergillus/Penicillium*	240
Fairfield Court	6506923	110	*Aspergillus/Penicillium*	53
Fairfield Court	6506923	110	*Cladosporium sp.*	27
Fairfield Court	6506936	117	*Aspergillus/Penicillium*	187
Fairfield Court	6506936	117	*Smuts*	27

Fairfield Court	6506939	114	*Aspergillus/Penicillium*	160
Fairfield Court	6506952	Cafeteria	*Aspergillus/Penicillium*	2000
Fairfield Court	6506953	555	*Ascospores*	53
Fairfield Court	6506953	555	*Aspergillus/Penicillium*	2000
Fox Williams Elem. School	48-6055	110	*Basidiospores*	1
Fox Williams Elem. School	48-6055	110	*Stachybotrys*	1
Fox Williams Elem. School	48-6055	110	*Unidentified*	1
Fox Williams Elem. School	48-6055	115	*Chaetomium sp.*	Low
Fox Williams Elem. School	48-6055	115	*Cladosporium sp.*	1
Fox Williams Elem. School	48-6055	115	*Periconia/Smuts/Myxo*	1
Fox Williams Elem. School	48-6055	115	*Stachybotrys*	Low
Fox Williams Elem. School	48-6055	203	*Periconia/Smuts*	Low
Fox Williams Elem. School	48-6055	203	*Stachybotrys*	Low
Fox Williams Elem. School	48-6055	214	*Ascospores*	Low
Fox Williams Elem. School	48-6055	214	*Cladosporium sp.*	Low
Fox Williams Elem.	48-6055	214	*Stachybotrys*	Low
Fox Williams Elem. School	48-6055	555	*Ascospores*	4
Fox Williams Elem. School	48-6055	555	*Basidiospores*	2
Fox Williams Elem. School	48-6055	555	*Cladosporium sp.*	7
Fox Williams Elem.	48-6055	555	*Pen/Asp-Type*	4
Fox Williams Elem. School	48-6055	555	*Periconia/Smuts/Myxo*	1
Fox Williams Elem. School	48-6055	B1	*Stachybotrys*	Medium
G. H. Reid Elem. School	6514340	555	*Alternaria sp.*	107
G. H. Reid Elem. School	6514340	555	*Ascospores*	2000
G. H. Reid Elem.	6514340	555	*Aspergillus/Penicillium*	53

G. H. Reid Elem. School	6514340	555	*Basidiospores*	1680
G. H. Reid Elem. School	6514340	555	*Bipolaris/Drechslera*	80
G. H. Reid Elem. School	6514340	555	*Cercospora sp.*	27
G. H. Reid Elem. School	6514340	555	*Cladosporium sp.*	2000
G. H. Reid Elem. School	6514340	555	*Epicoccum sp.*	107
G. H. Reid Elem. School	6514340	555	*Leptodontidium sp.*	1653
G. H. Reid Elem. School	6514340	555	*Myxomycetes*	27
G. H. Reid Elem. School	6514340	555	*Nigrospora sp.*	160
G. H. Reid Elem. School	6514340	555	*Oidium/Peronospora*	107
G. H. Reid Elem. School	6514340	555	*Rusts*	27
G. H. Reid Elem. School	6514341	102	*Alternaria sp.*	133
G. H. Reid Elem. School	6514341	102	*Ascospores*	640
G. H. Reid Elem. School	6514341	102	*Aspergillus/Penicillium*	80
G. H. Reid Elem. School	6514341	102	*Basidiospores*	800
G. H. Reid Elem. School	6514341	102	*Bipolaris/Drechslera*	53
G. H. Reid Elem. School	6514341	102	*Cladosporium sp.*	1013
G. H. Reid Elem.	6514341	102	*Curvularia sp.*	27
G. H. Reid Elem. School	6514341	102	*Epicoccum sp.*	240
G. H. Reid Elem. School	6514341	102	*Leptodontidium sp.*	400
G. H. Reid Elem. School	6514341	102	*Myxomycetes*	187
G. H. Reid Elem. School	6514341	102	*Periconia sp.*	53
G. H. Reid Elem. School	6514343	207	*Alternaria sp.*	53

G. H. Reid Elem. School	6514343	207	*Ascospores*	160
G. H. Reid Elem. School	6514343	207	*Basidiospores*	373
G. H. Reid Elem. School	6514343	207	*Bipolaris/Drechslera*	27
G. H. Reid Elem. School	6514343	207	*Cladosporium sp.*	293
G. H. Reid Elem. School	6514343	207	*Epicoccum sp.*	107
G. H. Reid Elem. School	6514343	207	*Leptodontium sp.*	453
G. H. Reid Elem. School	6514343	207	*Myxomycetes*	53
G. H. Reid Elem. School	6514345	201	*Alternaria sp.*	27
G. H. Reid Elem. School	6514345	201	*Ascospores*	213
G. H. Reid Elem. School	6514345	201	*Aspergillus/Penicillium*	53
G. H. Reid Elem. School	6514345	201	*Basidiospores*	293
G. H. Reid Elem.	6514345	201	*Bipolaris/Drechslera*	27
G. H. Reid Elem. School	6514345	201	*Cladosporium sp.*	427
G. H. Reid Elem. School	6514345	201	*Epicoccum sp.*	53
G. H. Reid Elem. School	6514345	201	*Leptodontidium sp.*	480
G. H. Reid Elem. School	6514345	201	*Smuts*	27
G. H. Reid Elem. School	6514350	105	*Alternaria sp.*	27
G. H. Reid Elem. School	6514350	105	*Ascospores*	293
G. H. Reid Elem. School	6514350	105	*Basidiospores*	347
G. H. Reid Elem. School	6514350	105	*Cladosporium sp.*	293
G. H. Reid Elem. School	6514350	105	*Epicoccum sp.*	80
G. H. Reid Elem. School	6514350	105	*Leptodontidium sp.*	293

G. H. Reid Elem. School	6514350	105	*Myxomycetes*	53
G. H. Reid Elem. School	6514350	105	*Smuts*	53
G. H. Reid Elem. School	6895406	103	*Alternaria sp.*	80
G. H. Reid Elem. School	6895406	103	*Basidiospores*	53
G. H. Reid Elem. School	6895406	103	*Bipolaris/Drechslera*	53
G. H. Reid Elem. School	6895406	103	*Cladosporium sp.*	213
G. H. Reid Elem. School	6895406	103	*Epicoccum sp.*	267
G. H. Reid Elem. School	6895406	103	*Periconia sp.*	53
George Mason Elem. School	7019060	114	*Ascospores*	1360
George Mason Elem. School	7019060	114	*Aspergillus/Penicillium*	53
George Mason Elem. School	7019060	114	*Basidiospores*	533
George Mason Elem. School	7019060	114	*Cladosporium sp.*	267
George Mason Elem. School	7019060	114	*Epicoccum sp.*	27
George Mason Elem. School	7019060	114	*Myxomycetes*	80
George Mason Elem. School	7019061	115	*Ascospores*	667
George Mason Elem. School	7019061	115	*Aspergillus/Penicillium*	293
George Mason Elem.	7019061	115	*Basidiospores*	320
George Mason Elem. School	7019061	115	*Cladosporium sp.*	187
George Mason Elem. School	7019061	115	*Curvularia sp.*	27
George Mason Elem. School	7019061	115	*Epicoccum sp.*	27
George Mason Elem. School	7019061	115	*Leptodontidium sp.*	240
George Mason Elem. School	7019061	115	*Myxomycetes*	80

George Mason Elem. School	7019061	115	*Rusts*	27
George Mason Elem. School	7019066	B3	*Ascospores*	1227
George Mason Elem. School	7019066	B3	*Basidiospores*	933
George Mason Elem. School	7019066	B3	*Cladosporium sp.*	27
George Mason Elem. School	7019066	B3	*Epicoccum sp.*	27
George Mason Elem. School	7019066	B3	*Leptodontidium sp.*	480
George Mason Elem. School	7019066	B3	*Myxomycetes*	27
George Mason Elem. School	7019081	Nurse Clinic	*Ascospores*	2000
George Mason Elem. School	7019081	Nurse Clinic	*Basidiospores*	2000
George Mason Elem. School	7019081	Nurse Clinic	*Chaetomium sp.*	27
George Mason Elem.	7019081	Nurse Clinic	*Cladosporium sp.*	240
George Mason Elem. School	7019081	Nurse Clinic	*Epicoccum sp.*	27
George Mason Elem. School	7019081	Nurse Clinic	*Pithomyces sp.*	27
George Mason Elem. School	7094359	555	*Alternaria sp.*	27
George Mason Elem. School	7094359	555	*Ascospores*	2000
George Mason Elem. School	7094359	555	*Aspergillus/Penicillium*	53
George Mason Elem. School	7094359	555	*Basidiospores*	2000
George Mason Elem. School	7094359	555	*Cladosporium sp.*	560
George Mason Elem. School	7094359	555	*Leptodontidium sp.*	2000
George Mason Elem. School	7094359	555	*Myxomycetes*	80
George Mason Elem. School	7094359	555	*Smuts*	160
George Mason Elem. School	7094363	B1	*Ascospores*	613

George Mason Elem. School	7094363	B1	*Basidiospores*	427
George Mason Elem. School	7094363	B1	*Leptodontidium sp.*	160
George Mason Elem. School	7094363	B1	*Myxomycetes*	27
George Wythe High School	6506919	112	*Basidiospores*	27
George Wythe High School	6506919	112	*Leptodontidium sp.*	27
George Wythe High School	6506920	111	*Aspergillus/Penicillium*	27
George Wythe High School	6506920	111	*Basidiospores*	53
George Wythe High School	6506923	137	*Basidiospores*	53
George Wythe High School	6506923	137	*Cladosporium sp.*	27
George Wythe High School	6506926	102	*Aspergillus/Penicillium*	80
George Wythe High School	6506926	102	*Basidiospores*	27
George Wythe High School	6506926	102	*Myxomycetes*	27
George Wythe High School	6506928	103	*Arthrinium sp.*	27
George Wythe High School	6506928	103	*Aspergillus/Penicillium*	27
George Wythe High School	6506928	103	*Basidiospores*	53
George Wythe High School	6506928	103	*Leptodontidium sp.*	27
George Wythe High	6506959	555	*Ascospores*	27
George Wythe High School	6506959	555	*Basidiospores*	240
George Wythe High School	6506959	555	*Cladosporium sp.*	27
George Wythe High School	6506959	555	*Leptodontidium sp.*	400
Ginter Park Elem. School	48-5882	1	*Ascospores*	2
Ginter Park Elem. School	48-5882	1	*Basidiospores*	1

Ginter Park Elem. School	48-5882	1	*Cladosporium sp.*	2
Ginter Park Elem. School	48-5882	12	*Ascospores*	6
Ginter Park Elem. School	48-5882	12	*Basidiospores*	2
Ginter Park Elem. School	48-5882	12	*Cladosporium sp.*	2
Ginter Park Elem. School	48-5882	12	*Pen/Asp-Type*	16
Ginter Park Elem. School	48-5882	12	*Periconia/Smuts/Myxo*	2
Ginter Park Elem. School	48-5882	555	*Ascospores*	3
Ginter Park Elem. School	48-5882	555	*Basidiospores*	4
Ginter Park Elem. School	48-5882	555	*Cladosporium sp.*	1
Ginter Park Elem.	48-5882	555	*Pen/Asp-Type*	2
Ginter Park Elem. School	48-5882	555	*Periconia/Smuts/Myxo*	8
Ginter Park Elem. School	48-5882	Auditorium	*Ascospores*	1
Ginter Park Elem. School	48-5882	Auditorium	*Cladosporium sp.*	1
Ginter Park Elem. School	48-5882	B8	*Cladosporium sp.*	3
Ginter Park Elem. School	48-5882	B8	*Pen/Asp-Type*	2
Ginter Park Elem. School	48-5882	Cafeteria	*Ascospores*	1
Ginter Park Elem. School	48-5882	Cafeteria	*Basidiospores*	1
Ginter Park Elem. School	48-5882	Cafeteria	*Cladosporium sp.*	3
Holton Elementary School	48-5882	104	*Ascospores*	3
Holton Elementary School	48-5882	104	*Basidiospores*	1
Holton Elementary School	48-5882	104	*Cladosporium sp.*	9
Holton Elementary School	48-5882	104	*Epicoccum*	1

Holton Elementary School	48-5882	104	*Pen/Asp-Type*	4
Holton Elementary School	48-5882	104	*Periconia/Smuts*	2
Holton Elementary School	48-5882	104	*Unidentified*	1
Holton Elementary School	48-5882	116	*Myxomycetes*	1
Holton Elementary School	48-5882	117	*Ascospores*	3
Holton Elementary School	48-5882	117	*Cladosporium sp.*	1
Holton Elementary School	48-5882	117	*Curvularia*	1
Holton Elementary School	48-5882	117	*Paecilomyces sp.*	4
Holton Elementary School	48-5882	117	*Pen/Asp-Type*	1
Holton Elementary School	48-5882	210	*Ascospores*	2
Holton Elementary School	48-5882	210	*Cladosporium sp.*	2
Holton Elementary School	48-5882	210	*Pen/Asp-Type*	3
Holton Elementary School	48-5882	212	*Ascospores*	1
Holton Elementary School	48-5882	212	*Cladosporium sp.*	2
Holton Elementary School	48-5882	212	*Pen/Asp-Type*	21
Holton Elementary School	48-5882	212	*Periconia/Smuts*	2
Holton Elementary	48-5882	555	*Ascospores*	76
Holton Elementary School	48-5882	555	*Basidiospores*	58
Holton Elementary School	48-5882	555	*Cladosporium sp.*	12
Holton Elementary School	48-5882	555	*Paecilomyces sp.*	14
J. B. Fischer Elem. School	48-6055	106	*Periconia/Smuts*	Low
J. B. Fischer Elem. School	48-6055	110	*Periconia/Smuts*	Low

J. B. Fischer Elem. School	48-6055	116	*Stachybotrys*	Low
J. B. Fischer Elem. School	48-6055	119	*Bipolaris/Drechslera*	Low
J. B. Fischer Elem. School	48-6055	119	*Chaetomium sp.*	Low
J. B. Fischer Elem. School	48-6055	119	*Stachybotrys*	Medium
J. B. Fischer Elem. School	48-6055	Unknown	*Periconia/Smuts*	Low
J. B. Fischer Elem. School	48-6055	Unknown	*Stachybotrys*	Low
J. L. Francis Elem. School	650-6914	22	*Ascospores*	267
J. L. Francis Elem. School	650-6914	22	*Basidiospores*	533
J. L. Francis Elem.	650-6914	22	*Cladosporium sp.*	800
J. L. Francis Elem. School	650-6914	22	*Epicoccum*	267
J. L. Francis Elem. School	650-6914	22	*Myxomycetes*	1867
J. L. Francis Elem. School	650-6916	9	*Basidiospores*	533
J. L. Francis Elem. School	650-6916	9	*Curvularia sp.*	267
J. L. Francis Elem. School	650-6916	9	*Myxomycetes*	533
J. L. Francis Elem. School	650-6931	34	*Basidiospores*	533
J. L. Francis Elem. School	650-6931	34	*Bispora sp.*	267
J. L. Francis Elem. School	650-6931	34	*Cladosporium sp.*	267
J. L. Francis Elem. School	650-6931	34	*Rusts*	267
J. L. Francis Elem. School	651-4330	12	*Ascospores*	267
J. L. Francis Elem. School	651-4330	12	*Myxomycetes*	267
J. L. Francis Elem. School	651-4334	16	*Basidiospores*	267
J. L. Francis Elem. School	651-4334	16	*Cladosporium sp.*	267

J. L. Francis Elem. School	651-4334	16	*Myxomycetes*	267
J. L. Francis Elem. School	651-4410	555	*Alternaria sp.*	267
J. L. Francis Elem. School	651-4410	555	*Ascospores*	2133
J. L. Francis Elem. School	651-4410	555	*Basidiospores*	2667
J. L. Francis Elem. School	651-4410	555	*Cladosporium sp.*	20000
J. L. Francis Elem. School	651-4410	555	*Curvularia sp.*	267
J. L. Francis Elem. School	651-4410	555	*Epicoccum sp.*	2400
J. L. Francis Elem. School	651-4410	555	*Leptodontidium sp.*	1067
J. L. Francis Elem. School	651-4410	555	*Myxomycetes*	2667
John B. Cary	48-5882	104	*Ascospores*	1
John B. Cary	48-5882	104	*Cladosporium sp.*	1
John B. Cary	48-5882	104	*Pen/Asp-Type*	5
John B. Cary	48-5882	104	*Periconia/Smuts/Myxo*	2
John B. Cary	48-5882	204	*Bipolaris/Drechslera*	1
John B. Cary	48-5882	204	*Chaetomium sp.*	1
John B. Cary	48-5882	204	*Cladosporium sp.*	1
John B. Cary	48-5882	204	*Pen/Asp-Type*	1
John B. Cary	48-5882	204	*Periconia/Smuts/Myxo*	4
John B. Cary	48-5882	205	*Ascospores*	1
John B. Cary	48-5882	555	*Pen/Asp-Type*	3
John B. Cary	48-5882	Cafeteria	*Pen/Asp-Type*	10
John B. Cary	48-5882	Music Room	*Ascospores*	3
John B. Cary	48-5882	Music Room	*Cladosporium sp.*	4
John B. Cary	48-5882	Music Room	*Pen/Asp-Type*	6
John B. Cary	48-5882	Music Room	*Periconia/Smuts/Myxo*	2
John F. Kennedy High School	650-6908	121	*Aspergillus/Penicillium*	160
John F. Kennedy High School	650-6908	121	*Basidiospores*	27
John F. Kennedy High School	650-6908	121	*Cladosporium sp.*	213
John F. Kennedy High School	650-6908	121	*Stachybotrys*	27
John F. Kennedy High	650-6910	Teacher's L.	*Aspergillus/Penicillium*	80

John F. Kennedy High School	650-6910	Teacher's L.	*Basidiospores*	133
John F. Kennedy High School	650-6910	Teacher's L.	*Cladosporium sp.*	53
John F. Kennedy High School	650-6910	Teacher's L.	*Leptodontidium sp.*	293
John F. Kennedy High School	650-6918	238	*Basidiospores*	53
John F. Kennedy High School	650-6918	238	*Leptodontium sp.*	27
John F. Kennedy High School	650-6935	555	*Alternaria sp.*	27
John F. Kennedy High School	650-6935	555	*Ascospores*	320
John F. Kennedy	650-6935	555	*Aspergillus/Penicillium*	53
John F. Kennedy High School	650-6935	555	*Basidiospores*	1520
John F. Kennedy High School	650-6935	555	*Cladosporium sp.*	133
John F. Kennedy High School	650-6935	555	*Leptodontidium sp.*	2000
John F. Kennedy High School	650-6935	555	*Myxomycetes*	27
John F. Kennedy High School	650-6937	120	*Ascospores*	80
John F. Kennedy High School	650-6937	120	*Aspergillus/Penicillium*	107
John F. Kennedy High School	650-6937	120	*Basidiospores*	293
John F. Kennedy High School	650-6937	120	*Cladosporium sp.*	2000
John F. Kennedy	650-6937	120	*Leptodontidium sp.*	693
John F. Kennedy High School	650-6947	248	*Leptodontidium sp.*	107
John Marshall High School	7094322	138	*Ascospores*	960
John Marshall High School	7094322	138	*Aspergillus/Penicillium*	53
John Marshall High School	7094322	138	*Basidiospores*	987
John Marshall High School	7094322	138	*Cladosporium sp.*	53
John Marshall High	7094322	138	*Curvularia sp.*	27

John Marshall High School	7094322	138	*Leptodontidium sp.*	320
John Marshall High School	7094322	138	*Myxomycetes*	27
John Marshall High School	7094324	234	*Ascospores*	1333
John Marshall High School	7094324	234	*Aspergillus/Penicillium*	53
John Marshall High School	7094324	234	*Basidiospores*	1067
John Marshall High School	7094324	234	*Bipolaris/Drechslera*	27
John Marshall High School	7094324	234	*Cladosporium sp.*	293
John Marshall High School	7094324	234	*Curvularia sp.*	53
John Marshall High School	7094324	234	*Leptodontidium sp.*	400
John Marshall High School	7094334	101	*Alternaria sp.*	27
John Marshall High School	7094334	101	*Ascospores*	667
John Marshall High School	7094334	101	*Aspergillus/Penicillium*	80
John Marshall High School	7094334	101	*Basidiospores*	720
John Marshall High School	7094334	101	*Cladosporium sp.*	27
John Marshall High School	7094334	101	*Curvularia sp.*	27
John Marshall High	7094334	101	*Leptodontidium sp.*	240
John Marshall High School	7094334	101	*Myxomycetes*	27
John Marshall High School	7094334	101	*Rusts*	27
John Marshall High School	7094338	112	*Ascospores*	1120
John Marshall High School	7094338	112	*Aspergillus/Penicillium*	80
John Marshall High School	7094338	112	*Basidiospores*	613
John Marshall High School	7094338	112	*Cladosporium sp.*	27

John Marshall High School	7094338	112	*Epicoccum sp.*	27
John Marshall High School	7094338	112	*Leptodontidium sp.*	320
John Marshall High School	7094338	112	*Myxomycetes*	27
John Marshall High School	7094340	222	*Ascospores*	1200
John Marshall High School	7094340	222	*Aspergillus/Penicillium*	160
John Marshall High	7094340	222	*Basidiospores*	827
John Marshall High School	7094340	222	*Cladosporium sp.*	27
John Marshall High School	7094340	222	*Leptodontidium sp.*	187
John Marshall High School	7094345	555	*Alternaria sp.*	27
John Marshall High School	7094345	555	*Ascospores*	2000
John Marshall High School	7094345	555	*Aspergillus/Penicillium*	293
John Marshall High School	7094345	555	*Basidiospores*	2000
John Marshall High School	7094345	555	*Bipolaris/Drechslera*	27
John Marshall High School	7094345	555	*Cladosporium sp.*	1387
John Marshall High School	7094345	555	*Epicoccum sp.*	27
John Marshall High School	7094345	555	*Fusarium*	27
John Marshall High School	7094345	555	*Leptodontidium sp.*	1627
John Marshall High School	7094345	555	*Myxomycetes*	27
Lucille M. Brown Middle School	6514354	Cafeteria	*Ascospores*	3200
Lucille M. Brown Middle School	6514354	Cafeteria	*Aspergillus/Penicillium*	1333
Lucille M. Brown Middle School	6514354	Cafeteria	*Basidiospores*	267
Lucille M. Brown Middle School	6514354	Cafeteria	*Bipolaris/Drechslera*	267

Lucille M. Brown Middle School	6514354	Cafeteria	*Cladosporium sp.*	800
Lucille M. Brown Middle School	6514354	Cafeteria	*Leptodontidium sp.*	800
Lucille M. Brown Middle School	7019075	303	*Ascospores*	533
Lucille M. Brown Middle School	7019075	303	*Basidiospores*	267
Lucille M. Brown Middle School	7019077	204	*Aspergillus/Penicillium*	267
Lucille M. Brown Middle School	7019077	204	*Basidiospores*	800
Lucille M. Brown Middle School	7019077	204	*Epicoccum*	267
Lucille M. Brown Middle School	7019077	204	*Leptodontidium sp.*	267
Lucille M. Brown Middle School	7019085	107	*Alternaria*	533
Lucille M. Brown Middle School	7019085	107	*Aspergillus/Penicillium*	1333
Lucille M. Brown Middle School	7019085	107	*Cladosporium sp.*	533
Lucille M. Brown Middle School	7019085	107	*Epicoccum*	533
Lucille M. Brown Middle School	7019085	107	*Leptodontidium sp.*	267
Lucille M. Brown Middle School	7019085	107	*Myxomycetes*	800
Lucille M. Brown Middle School	7019091	401	*Ascospores*	15467
Lucille M. Brown	7019091	401	*Basidiospores*	9067
Lucille M. Brown Middle School	7019091	401	*Leptodontidium sp.*	9867
Lucille M. Brown Middle School	7019091	401	*Myxomycetes*	267
Lucille M. Brown Middle School	7019101	555	*Alternaria*	800
Lucille M. Brown Middle School	7019101	555	*Ascospores*	20000
Lucille M. Brown Middle School	7019101	555	*Aspergillus/Penicillium*	533
Lucille M. Brown Middle School	7019101	555	*Basidiospores*	20000

Lucille M. Brown Middle School	7019101	555	*Cladosporium sp.*	20000
Lucille M. Brown Middle School	7019101	555	*Epicoccum*	533
Lucille M. Brown Middle School	7019101	555	*Leptodontidium sp.*	18933
Lucille M. Brown Middle School	7019101	555	*Myxomycetes*	267
Maggie Walker Sch.	7094316	206	*Alternaria sp.*	267
Maggie Walker School	7094316	206	*Ascospores*	267
Maggie Walker School	7094316	206	*Basidiospores*	533
Maggie Walker School	7094316	206	*Bipolaris/Drechslera*	267
Maggie Walker School	7094320	555	*Cladosporium sp.*	267
Maggie Walker School	7094325	319	*Alternaria sp.*	267
Maggie Walker School	7094325	319	*Epicoccum sp.*	267
Maggie Walker School	7094326	312	*Alternaria sp.*	1867
Maggie Walker School	7094326	312	*Ascospores*	7733
Maggie Walker School	7094326	312	*Aspergillus/Penicillium*	533
Maggie Walker School	7094326	312	*Basidiospores*	19200
Maggie Walker School	7094326	312	*Bipolaris/Drechslera*	267
Maggie Walker School	7094326	312	*Cladosporium sp.*	20000
Maggie Walker School	7094326	312	*Epicoccum sp.*	800
Maggie Walker School	7094326	312	*Leptodontidium sp.*	1067
Maggie Walker School	7094326	312	*Myxomycetes*	1067
Maggie Walker School	7094326	312	*Oidium/Peronospora*	267
Maggie Walker School	7094328	126	*Alternaria sp.*	267

Maggie Walker School	7094328	126	*Basidiospores*	267
Maggie Walker School	7094328	126	*Myxomycetes*	267
Maggie Walker School	7094341	112	*Ascospores*	267
Maggie Walker School	7094341	112	*Basidiospores*	267
Maggie Walker School	7094341	112	*Cladosporium sp.*	1067
Maggie Walker School	7094341	112	*Epicoccum sp.*	800
Maggie Walker School	7094341	112	*Pollythrincium*	267
Mary Munford School	48-5882	106	*Ascospores*	4
Mary Munford School	48-5882	106	*Basidiospores*	4
Mary Munford School	48-5882	106	*Cladosporium sp.*	12
Mary Munford School	48-5882	106	*Periconia/Smuts*	8
Mary Munford School	48-5882	107	*Ascospores*	20
Mary Munford School	48-5882	107	*Basidiospores*	4
Mary Munford School	48-5882	107	*Cladosporium sp.*	12
Mary Munford School	48-5882	201	*Ascospores*	24
Mary Munford	48-5882	201	*Basidiospores*	4
Mary Munford School	48-5882	201	*Bipolaris/Drechslera*	4
Mary Munford School	48-5882	201	*Cladosporium sp.*	16
Mary Munford School	48-5882	201	*Curvularia*	8
Mary Munford School	48-5882	201	*Pen/Asp-Type*	8
Mary Munford School	48-5882	201	*Periconia/Smuts*	12
Mary Munford School	48-5882	201	*Rusts*	12
Mary Munford School	48-5882	206	*Ascospores*	8
Mary Munford School	48-5882	206	*Basidiospores*	8
Mary Munford School	48-5882	206	*Cladosporium sp.*	12
Mary Munford Sch.	48-5882	206	*Epicoccum sp.*	4
Mary Munford School	48-5882	206	*Myxomycetes*	4
Mary Munford School	48-5882	555	*Alternaria sp.*	4
Mary Munford School	48-5882	555	*Ascospores*	108
Mary Munford School	48-5882	555	*Basidiospores*	80
Mary Munford School	48-5882	555	*Cladosporium sp.*	208
Mary Munford School	48-5882	555	*Epicoccum sp.*	8
Mary Munford School	48-5882	555	*Myxomycetes*	4
Mary Munford School	48-5882	555	*Pen/Asp-Type*	40
Mary Munford School	48-5882	555	*Periconia/Smuts*	8
Maymont School	6514337	105	*Alternaria sp.*	27

Maymont School	6514337	105	*Ascospores*	53
Maymont School	6514337	105	*Basidiospores*	133
Maymont School	6514337	105	*Cladosporium sp.*	107
Maymont School	6514337	105	*Epicoccum sp.*	53
Maymont School	6514337	105	*Myxomycetes*	27
Maymont School	6514337	105	*Pithomyces sp.*	27
Maymont School	6514337	105	*Pseodocercospora sp.*	27
Maymont School	6895419	555	*Alternaria sp.*	27
Maymont School	6895419	555	*Ascospores*	533
Maymont School	6895419	555	*Aspergillus/Penicillium*	27
Maymont School	6895419	555	*Basidiospores*	667
Maymont School	6895419	555	*Cladosporium sp.*	560
Maymont School	6895419	555	*Epicoccum sp.*	53
Maymont School	6895419	555	*Myxomycetes*	53
Maymont School	7019076	108	*Alternaria sp.*	53
Maymont School	7019076	108	*Ascospores*	187
Maymont School	7019076	108	*Basidiospores*	80
Maymont School	7019076	108	*Cladosporium sp.*	80
Maymont School	7019076	108	*Epicoccum sp.*	53
Maymont School	7019076	108	*Leptodontidium sp.*	53
Maymont School	7019076	108	*Periconia sp.*	53
Maymont School	7019089	106	*ND*	0
Maymont School	7019104	107	*Ascospores*	133
Maymont School	7019104	107	*Aspergillus/Penicillium*	27
Maymont School	7019104	107	*Basidiospores*	240
Maymont School	7019104	107	*Cladosporium sp.*	80
Maymont School	7019104	107	*Epicoccum sp.*	27
Maymont School	7019104	107	*Leptodontidium sp.*	53
Maymont School	7019104	107	*Myxomycetes*	53
Maymont School	7019104	107	*Polythrincium sp.*	27
Maymont School	7019104	107	*Torula sp.*	27
Maymont School	7019110	109	*Alternaria sp.*	27
Maymont School	7019110	109	*Ascospores*	27
Maymont School	7019110	109	*Aspergillus/Penicillium*	107
Maymont School	7019110	109	*Basidiospores*	107
Maymont School	7019110	109	*Cladosporium sp.*	27
Maymont School	7019110	109	*Epicoccum sp.*	27
Maymont School	7019110	109	*Leptodontidium sp.*	27
Maymont School	7019110	109	*Myxomycetes*	27
Miles Jerome Jones Elem. Sch.	7019058	203	*Alternaria sp.*	27
Miles Jerome Jones	7019058	203	*Ascospores*	27

Miles Jerome Jones Elem. Sch.	7019058	203	*Basidiospores*	80
Miles Jerome Jones Elem. Sch.	7019058	203	*Cladosporium sp.*	107
Miles Jerome Jones Elem. Sch.	7019065	108	*Alternaria sp.*	160
Miles Jerome Jones Elem. Sch.	7019065	108	*Ascospores*	160
Miles Jerome Jones Elem. Sch.	7019065	108	*Aspergillus/Penicillium*	53
Miles Jerome Jones Elem. Sch.	7019065	108	*Basidiospores*	453
Miles Jerome Jones Elem. Sch.	7019065	108	*Chaetomium sp.*	27
Miles Jerome Jones Elem. Sch.	7019065	108	*Cladosporium sp.*	80
Miles Jerome Jones Elem. Sch.	7019065	108	*Epicoccum sp.*	80
Miles Jerome Jones Elem. Sch.	7019065	108	*Leptodontidium sp.*	27
Miles Jerome Jones Elem. Sch.	7019065	108	*Myxomycetes*	53
Miles Jerome Jones	7019099	555	*Alternaria sp.*	27
Miles Jerome Jones Elem. Sch.	7019099	555	*Ascospores*	213
Miles Jerome Jones Elem. Sch.	7019099	555	*Aspergillus/Penicillium*	160
Miles Jerome Jones Elem. Sch.	7019099	555	*Basidiospores*	827
Miles Jerome Jones Elem. Sch.	7019099	555	*Cladosporium sp.*	693
Miles Jerome Jones Elem. Sch.	7019099	555	*Leptodontidium sp.*	27
Miles Jerome Jones Elem. Sch.	7019099	555	*Myxomycetes*	27
Miles Jerome Jones Elem. Sch.	7019099	555	*Pithomyces sp.*	27
Miles Jerome Jones Elem. Sch.	7019099	555	*Pollythrincium*	27
Miles Jerome Jones Elem. Sch.	7094358	109	*Alternaria sp.*	27
Miles Jerome Jones Elem. Sch.	7094358	109	*Ascospores*	53

Miles Jerome Jones Elem. Sch.	7094358	109	*Aspergillus/Penicillium*	213
Miles Jerome Jones Elem. Sch.	7094358	109	*Basidiospores*	53
Miles Jerome Jones Elem. Sch.	7094358	109	*Cladosporium sp.*	320
Miles Jerome Jones Elem. Sch.	7094358	109	*Myxomycetes*	53
Miles Jerome Jones Elem. Sch.	7094358	109	*Smuts*	27
Miles Jerome Jones Elem. Sch.	7094360	206	*Aspergillus/Penicillium*	53
Miles Jerome Jones Elem. Sch.	7094360	206	*Basidiospores*	80
Miles Jerome Jones Elem. Sch.	7094360	206	*Cladosporium sp.*	80
Miles Jerome Jones Elem. Sch.	7094360	206	*Leptodontidium sp.*	53
Mosby Middle School	6514348	110	*Ascospores*	240
Mosby Middle School	6514348	110	*Aspergillus/Penicillium*	53
Mosby Middle School	6514348	110	*Basidiospores*	53
Mosby Middle School	6514348	110	*Cladosporium sp.*	667
Mosby Middle School	6514348	110	*Leptodontidium sp.*	53
Mosby Middle School	6514351	205	*Ascospores*	427
Mosby Middle School	6514351	205	*Basidiospores*	53
Mosby Middle School	6514351	205	*Cladosporium sp.*	773
Mosby Middle School	6514351	205	*Leptodontidium sp.*	80
Mosby Middle School	6514351	205	*Myxomycetes*	27
Mosby Middle School	6514353	107	*Ascospores*	160
Mosby Middle School	6514353	107	*Aspergillus/Penicillium*	53
Mosby Middle School	6514353	107	*Basidiospores*	53
Mosby Middle School	6514353	107	*Cladosporium sp.*	213
Mosby Middle	6514389	555	*Ascospores*	480
Mosby Middle School	6514389	555	*Aspergillus/Penicillium*	1147
Mosby Middle School	6514389	555	*Basidiospores*	80
Mosby Middle School	6514389	555	*Cladosporium sp.*	1387
Mosby Middle School	6514389	555	*Epicoccum sp.*	27
Mosby Middle School	6514389	555	*Leptodontidium sp.*	160
Mosby Middle School	6895407	209	*Ascospores*	533
Mosby Middle School	6895407	209	*Bipolaris/Drechslera*	267
Mosby Middle School	6895407	209	*Epicoccum sp.*	800
Mosby Middle	6895407	209	*Myxomycetes*	267
Mosby Middle School	6895408	208	*Alternaria sp.*	27

Mosby Middle School	6895408	208	*Ascospores*	400
Mosby Middle School	6895408	208	*Aspergillus/Penicillium*	107
Mosby Middle School	6895408	208	*Basidiospores*	27
Mosby Middle School	6895408	208	*Cladosporium sp.*	1200
Mosby Middle School	6895408	208	*Leptodontidium sp.*	133
Mosby Middle School	6895425	202	*Ascospores*	133
Mosby Middle School	6895425	202	*Cladosporium sp.*	160
Mosby Middle School	6895425	202	*Leptodontidium sp.*	27
Mosby Middle School	6895426	555	*Alternaria sp.*	800
Mosby Middle School	6895426	555	*Ascospores*	267
Mosby Middle School	6895426	555	*Basidiospores*	533
Mosby Middle School	6895426	555	*Cladosporium sp.*	800
Mosby Middle School	6895426	555	*Epicoccum sp.*	2667
Mosby Middle School	6895426	555	*Myxomycetes*	533
Mosby Middle School	6895426	555	*Periconia sp.*	13333
Oak Grove Elem. School	6514328	206	*Ascospores*	53
Oak Grove Elem. School	6514328	206	*Aspergillus/Penicillium*	53
Oak Grove Elem. School	6514328	206	*Basidiospores*	27
Oak Grove Elem. School	6514328	206	*Cladosporium sp.*	133
Oak Grove Elem. School	6514328	206	*Leptodontidium sp.*	27
Oak Grove Elem. School	6514347	555	*Alternaria sp.*	53
Oak Grove Elem. School	6514347	555	*Ascospores*	2000
Oak Grove Elem. School	6514347	555	*Aspergillus/Penicillium*	373
Oak Grove Elem. School	6514347	555	*Basidiospores*	2000
Oak Grove Elem. School	6514347	555	*Bipolaris/Drechslera*	27
Oak Grove Elem. School	6514347	555	*Cercospora sp.*	53
Oak Grove Elem. School	6514347	555	*Cladosporium sp.*	2000
Oak Grove Elem. School	6514347	555	*Epicoccum sp.*	187
Oak Grove Elem. School	6514347	555	*Leptodontidium sp.*	2000

Oak Grove Elem. School	6514347	555	*Myxomycetes*	213
Oak Grove Elem. School	6514347	555	*Nigrospora sp.*	27
Oak Grove Elem. School	6514347	555	*Polythrincium sp.*	27
Oak Grove Elem. School	6514357	201	*Alternaria sp.*	27
Oak Grove Elem.	6514357	201	*Ascospores*	80
Oak Grove Elem. School	6514357	201	*Basidiospores*	53
Oak Grove Elem. School	6514357	201	*Cladosporium sp.*	480
Oak Grove Elem. School	6514361	204	*Alternaria sp.*	27
Oak Grove Elem. School	6514361	204	*Ascospores*	267
Oak Grove Elem. School	6514361	204	*Aspergillus/Penicillium*	53
Oak Grove Elem. School	6514361	204	*Basidiospores*	80
Oak Grove Elem. School	6514361	204	*Cercospora sp.*	27
Oak Grove Elem.	6514361	204	*Cladosporium sp.*	2000
Oak Grove Elem. School	6514361	204	*Epicoccum sp.*	27
Oak Grove Elem. School	6514361	204	*Leptodontidium sp.*	107
Oak Grove Elem. School	6514361	204	*Myxomycetes*	27
Oak Grove Elem. School	6514362	203	*Ascospores*	187
Oak Grove Elem. School	6514362	203	*Aspergillus/Penicillium*	133
Oak Grove Elem. School	6514362	203	*Basidiospores*	80
Oak Grove Elem. School	6514362	203	*Bipolaris/Drechslera*	27
Oak Grove Elem. School	6514362	203	*Cladosporium sp.*	933
Oak Grove Elem. School	6514362	203	*Curvularia sp.*	27
Oak Grove Elem.	6514362	203	*Myxomycetes*	80

Oak Grove Elem. School	6514376	106	*Alternaria sp.*	27
Oak Grove Elem. School	6514376	106	*Ascospores*	240
Oak Grove Elem. School	6514376	106	*Aspergillus/Penicillium*	53
Oak Grove Elem. School	6514376	106	*Basidiospores*	187
Oak Grove Elem. School	6514376	106	*Cladosporium sp.*	773
Oak Grove Elem. School	6514376	106	*Epicoccum sp.*	27
Oak Grove Elem. School	6514376	106	*Myxomycetes*	133
Oak Grove Elem. School	6895415	104	*Alternaria sp.*	27
Oak Grove Elem. School	6895415	104	*Ascospores*	533
Oak Grove Elem. School	6895415	104	*Basidiospores*	133
Oak Grove Elem. School	6895415	104	*Cladosporium sp.*	533
Oak Grove Elem. School	6895415	104	*Epicoccum sp.*	27
Oak Grove Elem. School	6895415	104	*Leptodontidium sp.*	107
Oak Grove Elem. School	6895415	104	*Myxomycetes*	80
Oak Grove Elem. School	6895415	104	*Pithomyces sp.*	27
Oak Grove Elem. School	6895418	105	*Alternaria sp.*	27
Oak Grove Elem. School	6895418	105	*Ascospores*	213
Oak Grove Elem. School	6895418	105	*Aspergillus/Penicillium*	240
Oak Grove Elem. School	6895418	105	*Basidiospores*	27
Oak Grove Elem. School	6895418	105	*Cladosporium sp.*	533
Oak Grove Elem. School	6895418	105	*Epicoccum sp.*	27
Oak Grove Elem.	6895418	105	*Myxomycetes*	240

Onslow Minnis Middle School	48-5882	104	*Alternaria sp.*	6
Onslow Minnis Middle School	48-5882	104	*Ascospores*	16
Onslow Minnis Middle School	48-5882	104	*Basidiospores*	30
Onslow Minnis	48-5882	104	*Cladosporium sp.*	60
Onslow Minnis Middle School	48-5882	104	*Pen/Asp-Type*	26
Onslow Minnis Middle School	48-5882	104	*Periconia/Smuts*	2
Onslow Minnis Middle School	48-5882	106	*Alternaria sp.*	2
Onslow Minnis Middle School	48-5882	106	*Ascospores*	12
Onslow Minnis Middle School	48-5882	106	*Basidiospores*	18
Onslow Minnis Middle School	48-5882	106	*Cladosporium sp.*	38
Onslow Minnis	48-5882	106	*Pen/Asp-Type*	32
Onslow Minnis Middle School	48-5882	207	*Cladosporium sp.*	2
Onslow Minnis Middle School	48-5882	207	*Pen/Asp-Type*	17
Onslow Minnis Middle School	48-5882	207	*Periconia/Smuts*	1
Onslow Minnis Middle School	48-5882	305	*Basidiospores*	1
Onslow Minnis Middle School	48-5882	305	*Cladosporium sp.*	4
Onslow Minnis Middle School	48-5882	305	*Pen/Asp-Type*	1
Onslow Minnis Middle School	48-5882	555	*Alternaria sp.*	60
Onslow Minnis Middle School	48-5882	555	*Ascospores*	152
Onslow Minnis Middle School	48-5882	555	*Basidiospores*	140
Onslow Minnis Middle School	48-5882	555	*Cladosporium sp.*	192
Onslow Minnis Middle School	48-5882	555	*Epicoccum sp.*	28
Onslow Minnis	48-5882	555	*Pen/Asp-Type*	4

Onslow Minnis Middle School	48-5882	555	*Periconia/Smuts*	12
Onslow Minnis Middle School	48-5882	203A	*Alternaria sp.*	1
Onslow Minnis Middle School	48-5882	203A	*Ascospores*	1
Onslow Minnis Middle School	48-5882	203A	*Cladosporium sp.*	4
Onslow Minnis Middle School	48-5882	203A	*Pen/Asp-Type*	2
Overby-Sheppard School	6506915	555	*Alternaria sp.*	27
Overby-Sheppard School	6506915	555	*Ascospores*	53
Overby-Sheppard School	6506915	555	*Aspergillus/Penicillium*	53
Overby-Sheppard School	6506915	555	*Basidiospores*	160
Overby-Sheppard School	6506915	555	*Cladosporium sp.*	80
Overby-Sheppard School	6506915	555	*Epicoccum sp.*	27
Overby-Sheppard School	6506915	555	*Myxomycetes*	27
Overby-Sheppard School	6506915	555	*Periconia sp.*	27
Overby-Sheppard School	6514342	100	*Aspergillus/Penicillium*	27
Overby-Sheppard School	6514342	100	*Basidiospores*	53
Overby-Sheppard School	6514342	100	*Epicoccum sp.*	27
Overby-Sheppard School	6514342	100	*Leptodontidium sp.*	27
Overby-Sheppard School	6514366	108	*Aspergillus/Penicillium*	53
Overby-Sheppard School	6514366	108	*Basidiospores*	53
Overby-Sheppard School	6514366	108	*Cladosporium sp.*	53
Overby-Sheppard School	6514366	108	*Epicoccum sp.*	53
Overby-Sheppard	6514366	108	*Myxomycetes*	53

Overby-Sheppard School	6514366	108	*Periconia sp.*	27
Overby-Sheppard School	6514377	Media Center	*Arthrinium sp.*	27
Overby-Sheppard	6514377	Media Center	*Epicoccum sp.*	27
Overby-Sheppard School	6514377	Media Center	*Periconia sp.*	160
Overby-Sheppard School	6514377	Media Center	*Ulocladium sp.*	27
Overby-Sheppard School	6514394	102	*Epicoccum sp.*	27
Overby-Sheppard School	6514411	110	*Basidiospores*	50
Overby-Sheppard School	6514411	110	*Cladosporium sp.*	80
Patrick Henry Elem.	6506911	108	*Ascospores*	53
Patrick Henry Elem. School	6506911	108	*Aspergillus/Penicillium*	533
Patrick Henry Elem. School	6506911	108	*Basidiospores*	160
Patrick Henry Elem. School	6506911	108	*Chaetomium sp.*	27
Patrick Henry Elem. School	6506911	108	*Curvularia sp.*	27
Patrick Henry Elem. School	6506911	108	*Epicoccum*	27
Patrick Henry Elem. School	6506911	108	*Leptodontidium sp.*	133
Patrick Henry Elem. School	6506940	555	*Basidiospores*	507
Patrick Henry Elem. School	6506940	555	*Leptodontidium sp.*	720
Patrick Henry Elem. School	6506940	555	*Myxomycetes*	27
Patrick Henry Elem. School	6506944	202	*Aspergillus/Penicillium*	27
Patrick Henry Elem. School	6506944	202	*Basidiospores*	107
Patrick Henry Elem. School	6506944	202	*Cladosporium sp.*	27
Patrick Henry Elem. School	6506949	203	*Aspergillus/Penicillium*	53
Patrick Henry Elem.	6506949	203	*Basidiospores*	187

Patrick Henry Elem. School	6506949	203	*Cladosporium sp.*	213
Patrick Henry Elem. School	6506949	203	*Leptodontidium sp.*	107
Patrick Henry Elem. School	6506955	106	*Aspergillus/Penicillium*	53
Patrick Henry Elem. School	6506955	106	*Basidiospores*	133
Patrick Henry Elem. School	6506955	106	*Cladosporium sp.*	160
Patrick Henry Elem. School	6506955	106	*Epicoccum sp.*	27
Patrick Henry Elem. School	6506955	106	*Leptodontidium sp.*	160
Preschool Development Center	48-6055	1	*Ascospores*	7
Preschool Development Center	48-6055	1	*Basidiospores*	1
Preschool Development Center	48-6055	1	*Cladosporium sp.*	4
Preschool Development Center	48-6055	1	*Epicoccum sp.*	3
Preschool Development Center	48-6055	2	*Cladosporium sp.*	3
Preschool Development Center	48-6055	4	*Cladosporium sp.*	4
Preschool Development Center	48-6055	4	*Pen/Asp-Type*	3
Preschool Development Center	48-6055	4	*Periconia/Smuts/Myxo*	1
Preschool Development Center	48-6055	5	*Cladosporium sp.*	5
Preschool Development Center	48-6055	5	*Epicoccum sp.*	1
Preschool Development Center	48-6055	5	*Periconia/Smuts/Myxo*	1
Preschool Development Center	48-6055	9	*Cladosporium sp.*	2
Preschool Development Center	48-6055	555	*Ascospores*	2
Preschool Development Center	48-6055	555	*Chaetomium sp.*	1
Preschool	48-6055	555	*Cladosporium sp.*	3

Preschool Development Center	48-6055	555	*Epicoccum sp.*	1
Preschool	48-6055	555	*Pen/Asp-Type*	59
Preschool Development Center	48-6055	555	*Torula sp.*	1
RTC	48-6055	108	*Ascospores*	1
RTC	48-6055	108	*Basidiospores*	4
RTC	48-6055	108	*Cladosporium sp.*	5
RTC	48-6055	108	*Pen/Asp-Type*	18
RTC	48-6055	108	*Periconia/Smuts/Myxo*	3
RTC	48-6055	113	*Ascospores*	1
RTC	48-6055	113	*Basidiospores*	3
RTC	48-6055	113	*Cladosporium sp.*	11
RTC	48-6055	113	*Pen/Asp-Type*	27
RTC	48-6055	201	*Cladosporium sp.*	5
RTC	48-6055	207	*Ascospores*	1
RTC	48-6055	207	*Basidiospores*	1
RTC	48-6055	207	*Cladosporium sp.*	13
RTC	48-6055	207	*Pen/Asp-Type*	3
RTC	48-6055	207	*Periconia/Smuts/Myxo*	1
RTC	48-6055	235	*Ascospores*	15
RTC	48-6055	235	*Basidiospores*	5
RTC	48-6055	235	*Cladosporium sp.*	26
RTC	48-6055	235	*Pen/Asp-Type*	8
RTC	48-6055	555	*ND*	0
Southampton Elem. School	6506929	555	*Ascospores*	80
Southampton Elem. School	6506929	555	*Aspergillus/Penicillium*	53
Southampton Elem. School	6506929	555	*Basidiospores*	160
Southampton Elem. School	6506929	555	*Bipolaris/Drechslera*	27
Southampton Elem. School	6506929	555	*Cladosporium sp.*	133
Southampton Elem. School	6506929	555	*Epicoccum sp.*	53
Southampton Elem. School	6506929	555	*Fusarium*	27
Southampton Elem. School	6506929	555	*Pithomyces sp.*	27
Southampton Elem. School	6506929	555	*Polythrincium sp.*	27

Southampton Elem. School	6506932	26	*Cladosporium sp.*	27
Southampton Elem.	6506932	26	*Myxomycetes*	27
Southampton Elem. School	6514356	28	*Basidiospores*	27
Southampton Elem. School	6514356	28	*Cladosporium sp.*	27
Southampton Elem. School	6514363	15	*Ascospores*	27
Southampton Elem. School	6514363	15	*Aspergillus/Penicillium*	27
Southampton Elem. School	6514363	15	*Basidiospores*	53
Southampton Elem. School	6514363	15	*Cladosporium sp.*	27
Southampton Elem. School	6514380	18	*Basidiospores*	27
Southampton Elem. School	6514395	29	*Basidiospores*	27
Southampton Elem. School	6514395	29	*Cladosporium sp.*	53
Southampton Elem. School	6514395	29	*Epicoccum sp.*	27
Southampton Elem. School	6514395	29	*Exosporiella sp.*	27
Summer Hill Elementary School	6506912	5	*Basidiospores*	27
Summer Hill Elementary School	6506912	5	*Leptodontidium sp.*	53
Summer Hill Elementary School	6506922	9	*Alternaria sp.*	27
Summer Hill Elementary School	6506922	9	*Aspergillus/Penicillium*	373
Summer Hill Elementary School	6506922	9	*Basidiospores*	240
Summer Hill Elementary School	6506922	9	*Cladosporium sp.*	240
Summer Hill Elementary School	6506922	9	*Leptodontidium sp.*	133
Summer Hill Elementary School	6506934	11	*Alternaria sp.*	27
Summer Hill Elementary School	6506934	11	*Ascospores*	107

Summer Hill Elementary School	6506934	11	*Basidiospores*	53
Summer Hill	6506934	11	*Cladosporium sp.*	53
Summer Hill Elementary School	6506934	11	*Leptodontidium sp.*	80
Summer Hill Elementary School	6514329	Auditorium	*Aspergillus/Penicillium*	80
Summer Hill Elementary School	6514329	Auditorium	*Basidiospores*	80
Summer Hill Elem.	6514329	Auditorium	*Cladosporium sp.*	80
Summer Hill Elementary School	6514329	Auditorium	*Leptodontidium sp.*	27
Summer Hill Elementary School	6514352	Basement #19	*Alternaria sp.*	27
Summer Hill Elementary School	6514352	Basement #19	*Aspergillus/Penicillium*	160
Summer Hill Elementary School	6514352	Basement #19	*Basidiospores*	187
Summer Hill Elementary School	6514352	Basement #19	*Bipolaris/Drechslera*	27
Summer Hill Elementary School	6514352	Basement #19	*Cladosporium sp.*	480
Summer Hill Elementary School	6514352	Basement #19	*Leptodontidium sp.*	107
Summer Hill Elementary School	6514355	1	*Alternaria sp.*	27
Summer Hill Elementary School	6514388	Basement #18	*Ascospores*	27
Summer Hill Elementary School	6514388	Basement #18	*Basidiospores*	27
Summer Hill Elementary School	6514388	Basement #18	*Cladosporium sp.*	80
Summer Hill Elementary School	6514388	Basement #18	*Leptodontidium sp.*	53
Summer Hill Elementary School	6514388	Basement #18	*Pithomyces sp.*	27
Summer Hill Elementary School	6514392	555	*Ascospores*	53
Summer Hill Elementary School	6514392	555	*Aspergillus/Penicillium*	320
Summer Hill Elementary School	6514392	555	*Basidiospores*	347
Summer Hill	6514392	555	*Cladosporium sp.*	160

Summer Hill Elementary School	6514392	555	*Epicoccum sp.*	53
Summer Hill Elementary School	6514392	555	*Leptodontidium sp.*	293
Summer Hill Elementary School	6514392	555	*Oidium/Peronospora*	27
Summer Hill School	NO DATA	NO DATA	*NO DATA*	NO DATA
Summer Hill School	NO DATA	NO DATA	*NO DATA*	NO DATA
Swansboro Elementary School	7019068	555	*Ascospores*	2000
Swansboro Elementary School	7019068	555	*Basidiospores*	2000
Swansboro Elementary School	7019068	555	*Chaetomium sp.*	27
Swansboro Elementary School	7019068	555	*Cladosporium sp.*	213
Swansboro Elementary School	7019068	555	*Curvularia sp.*	53
Swansboro Elementary School	7019068	555	*Epicoccum sp.*	27
Swansboro Elementary School	7019068	555	*Leptodontidium sp.*	2000
Swansboro Elementary School	7019068	555	*Myxomycetes*	53
Swansboro Elementary School	7019071	203	*Ascospores*	2000
Swansboro Elementary School	7019071	203	*Basidiospores*	1333
Swansboro Elementary School	7019071	203	*Cladosporium sp.*	427
Swansboro Elementary School	7019071	203	*Epicoccum sp.*	27
Swansboro Elementary School	7019071	203	*Leptodontidium sp.*	960
Swansboro Elementary School	7019083	Media Center	*Ascospores*	400
Swansboro Elementary School	7019083	Media Center	*Basidiospores*	267
Swansboro Elementary School	7019083	Media Center	*Cladosporium sp.*	293
Swansboro	7019083	Media Center	*Epicoccum sp.*	27

Swansboro	7019083	Media Center	*Leptodontidium sp.*	267
Swansboro Elementary School	7019083	Media Center	*Myxomycetes*	80
Swansboro Elementary School	7019083	Media Center	*Pithomyces sp.*	27
Swansboro Elem.	7019092	106	*Alternaria sp.*	27
Swansboro Elementary School	7019092	106	*Ascospores*	1387
Swansboro Elementary School	7019092	106	*Basidiospores*	960
Swansboro Elementary School	7019092	106	*Bipolaris/Drechslera*	27
Swansboro Elementary School	7019092	106	*Cladosporium sp.*	213
Swansboro Elementary School	7019092	106	*Epicoccum sp.*	53
Swansboro Elementary School	7019092	106	*Leptodontidium sp.*	640
Swansboro Elementary School	7019092	106	*Myxomycetes*	27
Swansboro Elementary School	7019096	107	*Alternaria sp.*	27
Swansboro Elementary School	7019096	107	*Ascospores*	1093
Swansboro Elementary School	7019096	107	*Aspergillus/Penicillium*	107
Swansboro Elementary School	7019096	107	*Basidiospores*	560
Swansboro Elementary School	7019096	107	*Bipolaris/Drechslera*	27
Swansboro Elementary School	7019096	107	*Cladosporium sp.*	213
Swansboro Elementary School	7019096	107	*Curvularia sp.*	53
Swansboro Elementary School	7019096	107	*Epicoccum sp.*	27
Swansboro Elementary School	7019096	107	*Leptodontidium sp.*	267
Swansboro Elementary School	7019096	107	*Myxomycetes*	80
Swansboro Elementary School	7019096	107	*Stachybotrys*	27
Swansboro	7019105	103	*Ascospores*	1653

Swansboro Elementary School	7019105	103	*Aspergillus/Penicillium*	80
Swansboro Elementary School	7019105	103	*Basidiospores*	1147
Swansboro Elementary School	7019105	103	*Cladosporium sp.*	107
Swansboro Elementary School	7019105	103	*Epicoccum sp.*	27
Swansboro Elementary School	7019105	103	*Leptodontidium sp.*	640
Swansboro Elementary School	7019105	103	*Rusts*	27
T.C Boushall Middle School	7019084	555	*Alternaria*	133
T.C Boushall Middle School	7019084	555	*Ascospores*	1307
T.C Boushall Middle School	7019084	555	*Aspergillus/Penicillium*	53
T.C Boushall Middle School	7019084	555	*Basidiospores*	2000
T.C Boushall Middle School	7019084	555	*Cladosporium sp.*	1280
T.C Boushall Middle	7019084	555	*Epicoccum*	53
T.C Boushall Middle School	7019084	555	*Myxomycetes*	107
T.C Boushall Middle School	7019084	555	*Pestalotia*	27
T.C Boushall Middle School	7019084	555	*Pollythrincium*	27
T.C Boushall Middle School	7019086	Grade VI Room	*Alternaria*	80
T.C Boushall Middle School	7019086	Grade VI Room	*Ascospores*	240
T.C Boushall Middle School	7019086	Grade VI Room	*Aspergillus/Penicillium*	53
T.C Boushall Middle School	7019086	Grade VI Room	*Basidiospores*	213
T.C Boushall Middle School	7019086	Grade VI Room	*Bipolaris/Drechslera*	27
T.C Boushall Middle School	7019086	Grade VI Room	*Cladosporium sp.*	213
T.C Boushall Middle School	7019086	Grade VI Room	*Curvularia*	27

T.C Boushall Middle School	7019086	Grade VI Room	*Epicoccum*	27
T.C Boushall Middle	7019086	Grade VI	*Leptodontidium sp.*	27
T.C Boushall Middle School	7019086	Grade VI Room	*Myxomycetes*	27
T.C Boushall Middle School	7019086	Grade VI Room	*Pithomyces*	27
T.C Boushall Middle School	7019087	Health B	*Alternaria*	133
T.C Boushall Middle School	7019087	Health B	*Ascospores*	640
T.C Boushall Middle School	7019087	Health B	*Basidiospores*	560
T.C Boushall Middle School	7019087	Health B	*Cladosporium sp.*	1440
T.C Boushall Middle School	7019087	Health B	*Curvularia*	53
T.C Boushall Middle School	7019087	Health B	*Epicoccum*	133
T.C Boushall Middle School	7019087	Health B	*Myxomycetes*	80
T.C Boushall Middle School	7019087	Health B	*Pollythrincium*	27
T.C Boushall Middle School	7019087	Health B	*Sporidesmium*	27
T.C Boushall Middle School	7019090	156	*Ascospores*	53
T.C Boushall Middle School	7019090	156	*Basidiospores*	27
T.C Boushall Middle School	7019094	Choir Room	*Ascospores*	27
T.C Boushall Middle School	7019094	Choir Room	*Aspergillus/Penicillium*	107
T.C Boushall Middle School	7019094	Choir Room	*Basidiospores*	107
T.C Boushall Middle School	7019094	Choir Room	*Cladosporium sp.*	133
T.C Boushall Middle School	7019094	Choir Room	*Epicoccum*	27
Thomas Jefferson School	48-5882	106	*Ascospores*	7
Thomas Jefferson School	48-5882	106	*Cladosporium sp.*	16

Thomas Jefferson School	48-5882	110	*Ascospores*	64
Thomas Jefferson School	48-5882	110	*Basidiospores*	24
Thomas Jefferson School	48-5882	110	*Cladosporium sp.*	68
Thomas Jefferson School	48-5882	110	*Pen/Asp-Type*	4
Thomas Jefferson School	48-5882	206	*Ascospores*	33
Thomas Jefferson School	48-5882	206	*Basidiospores*	9
Thomas Jefferson School	48-5882	206	*Cladosporium sp.*	23
Thomas Jefferson School	48-5882	206	*Pen/Asp-Type*	17
Thomas Jefferson School	48-5882	206	*Periconia/Smuts*	2
Thomas Jefferson School	48-5882	219	*Cladosporium sp.*	1
Thomas Jefferson School	48-5882	309	*Ascospores*	1
Thomas Jefferson School	48-5882	309	*Basidiospores*	2
Thomas Jefferson School	48-5882	309	*Cladosporium sp.*	7
Thomas Jefferson School	48-5882	309	*Pen/Asp-Type*	26
Thomas Jefferson School	48-5882	555	*Ascospores*	156
Thomas Jefferson School	48-5882	555	*Basidiospores*	84
Thomas Jefferson School	48-5882	555	*Cladosporium sp.*	196
Thomas Jefferson School	48-5882	555	*Pen/Asp-Type*	56
Thomas Jefferson School	48-5882	555	*Periconia/Smuts*	12
Thomas Jefferson School	48-5882	555	*Unidentified*	4
Thompson Middle School	651-4417	102	*Aspergillus/Penicillium*	80
Thompson Middle	651-4425	555	*Ascospores*	160

Thompson Middle	651-4425	555	*Aspergillus/Penicillium*	160
Thompson Middle School	651-4427	205B	*ND*	0
Thompson Middle School	651-4429	107	*Aspergillus/Penicillium*	107
Thompson Middle School	651-6925	112	*Aspergillus/Penicillium*	2000
Thompson Middle School	651-6951	105	*Ascospores*	27
Thompson Middle School	651-6951	105	*Aspergillus*	53
West Over Hills Elem. School	7094315	21	*Ascospores*	4
West Over Hills Elem. School	7094315	21	*Cladosporium sp.*	10
West Over Hills Elem. School	7094315	21	*Pen/Asp-Type*	27
West Over Hills Elem. School	7094315	21	*Periconia/Smuts*	1
West Over Hills Elem. School	7094321	17	*Ascospores*	12
West Over Hills Elem. School	7094321	17	*Cladosporium sp.*	44
West Over Hills Elem. School	7094323	555	*Ascospores*	136
West Over Hills Elem. School	7094323	555	*Basidiospores*	32
West Over Hills Elem. School	7094323	555	*Cladosporium sp.*	304
West Over Hills Elem. School	7094323	555	*Pen/Asp-Type*	200
West Over Hills Elem. School	7094323	555	*Periconia/Smuts*	8
West Over Hills Elem. School	7094330	6	*Ascospores*	6
West Over Hills Elem. School	7094330	6	*Cladosporium sp.*	5
West Over Hills Elem. School	7094330	6	*Pen/Asp-Type*	1
West Over Hills Elem. School	7094342	3	*Ascospores*	40
West Over Hills Elem. School	7094342	3	*Basidiospores*	20

West Over Hills Elem. School	7094342	3	*Cladosporium sp.*	32
West Over Hills Elem. School	7094342	3	*Pen/Asp-Type*	40
West Over Hills Elem. School	7094342	3	*Periconia/Smuts*	4
Woodville Elementary School	7019063	118	*Alternaria sp.*	53
Woodville Elementary School	7019063	118	*Ascospores*	27
Woodville Elementary School	7019063	118	*Aspergillus/Penicillium*	80
Woodville Elementary School	7019063	118	*Basidiospores*	160
Woodville Elementary School	7019063	118	*Bipolaris/Drechslera*	27
Woodville Elementary School	7019063	118	*Cladosporium sp.*	320
Woodville Elementary School	7019063	118	*Epicoccum sp.*	27
Woodville Elementary School	7019063	118	*Myxomycetes*	27
Woodville Elementary School	7019080	A-5	*Ascospores*	27
Woodville Elementary School	7019080	A-5	*Basidiospores*	27
Woodville Elementary School	7019080	A-5	*Cladosporium sp.*	53
Woodville Elementary School	7019080	A-5	*Epicoccum sp.*	53
Woodville Elementary School	7094354	A-7	*Alternaria sp.*	160
Woodville Elementary School	7094354	A-7	*Ascospores*	80
Woodville Elementary School	7094354	A-7	*Aspergillus/Penicillium*	27
Woodville Elementary School	7094354	A-7	*Bipolaris/Drechslera*	267
Woodville Elementary School	7094354	A-7	*Chaetomium sp.*	27
Woodville Elementary School	7094354	A-7	*Cladosporium sp.*	293
Woodville Elem.	7094354	A-7	*Curvularia sp.*	107

Woodville Elementary School	7094354	A-7	*Epicoccum sp.*	80
Woodville Elementary School	7094354	A-7	*Myxomycetes*	187
Woodville Elementary School	7094354	A-7	*Smuts*	53
Woodville Elementary School	7094356	555	*Alternaria sp.*	160
Woodville Elementary School	7094356	555	*Ascospores*	2000
Woodville Elementary School	7094356	555	*Aspergillus/Penicillium*	107
Woodville Elementary School	7094356	555	*Basidiospores*	2000
Woodville Elementary School	7094356	555	*Bipolaris/Drechslera*	80
Woodville Elementary School	7094356	555	*Cercospora sp.*	27
Woodville Elementary School	7094356	555	*Cladosporium sp.*	1813
Woodville Elementary School	7094356	555	*Curvularia sp.*	27
Woodville Elementary School	7094356	555	*Leptodontidium sp.*	827
Woodville Elementary School	7094356	555	*Myxomycetes*	53
Woodville Elementary School	7094356	555	*Pithomyces sp.*	107
Woodville Elementary School	7094366	116	*Ascospores*	53
Woodville Elementary School	7094366	116	*Basidiospores*	53
Woodville Elementary School	7094366	116	*Cladosporium sp.*	27
Woodville Elementary School	7094366	116	*Epicoccum sp.*	27

Appendix 2

The data for Swab and Tape lift Samples collected for the Indoor and Outdoor Environments

School	Sample Number	Sample Room	Fungal Id.
Adult Career Dev. Center	650-6921	106	*ND*
Adult Career Dev. Center	650-6924	112	*ND*
Adult Career Dev. Center	650-6924	112	*ND*
Adult Career Dev. Center	650-6930	101	*ND*
Adult Career Dev. Center	650-6941	201	*ND*
Adult Career Dev. Center	650-6941	201	*ND*
Adult Career Dev. Center	650-6957	555	*ND*
Adult Career Dev. Center	650-6957	555	*ND*
Adult Career Dev. Center	650-6969	105	*ND*
Adult Career Dev. Center	650-6969	105	*ND*
Albert Norell V	48-5882	201	*Pen/Asp-Type*
Albert Norell V	48-5882	204	*ND*
Albert Norell V	48-5882	205	*ND*
Albert Norell V	48-5882	207	*ND*
Albert Norell V	48-5882	208	*Epicoccum sp./Periconia/Smuts*
Albert Norell V	48-5882	555	*ND*
Amelia Street School	7019070	113	*Aspergillus/NS Colonies*
Amelia Street School	7019070	113	*Aspergillus/NS Colonies*
Amelia Street School	7019070	113	*Aspergillus/NS Colonies*
Amelia Street School	7019072	108	*Yeast/NS Colonies*
Amelia Street School	7019072	108	*Yeast/NS Colonies*
Amelia Street School	7019072	108	*Yeast/NS Colonies*
Amelia Street Sch.	7019074	110	*NS Colonies*

Amelia Street School	7019074	110	*NS Colonies*
Amelia Street School	7019082	102	*Alternaria sp./Yeast/NS Colonies*
Amelia Street School	7019082	102	*Alternaria sp./Yeast/NS Colonies*
Amelia Street School	7094364	555	*ND*
Amelia Street School	7094364	555	*ND*
Amelia Street School	7094364	555	*ND*
Amelia Street School	7094371	107	*NS Colonies*
Amelia Street School	7094371	107	*NS Colonies*
Bellevue School	6514418	105	*ND*
Bellevue School	6514423	103	*Cladosporium sp.*
Bellevue School	6514423	103	*Cladosporium sp.*
Bellevue School	6514446	555	*ND*
Bellevue School	6514446	555	*ND*
Bellevue School	6514447	102	*ND*
Bellevue School	6514447	102	*ND*
Bellevue School	6514448	104	*Aspergillus/Yeast*
Bellevue School	6514448	104	*Aspergillus/Yeast*
Blackwell Elementary School	48-5882	103	*ND*
Blackwell Elementary School	48-5882	116	*ND*
Blackwell Elementary School	48-5882	119	*ND*
Blackwell Elementary School	48-5882	119	*ND*
Blackwell Elementary School	48-5882	208	*ND*
Blackwell Elementary School	48-5882	212	*ND*

Blackwell Elementary School	48-5882	555	*ND*
Broadrock School	6506950	109	*Penicillium sp.*
Broadrock School	6506950	109	*Penicillium sp.*
Broadrock School	6506950	109	*Penicillium sp.*
Broadrock School	6514409	555	*ND*
Broadrock School	6514409	555	*ND*
Broadrock School	6514409	555	*ND*
Broadrock School	6514409	555	*ND*
Broadrock School	6514428	111	*Penicillium sp.*
Broadrock School	6514428	111	*Penicillium sp.*
Broadrock School	6514428	111	*Penicillium sp.*
Broadrock School	6514435	Auditorium	*Yeast/Pithomyces/Aspergillus/Penicillium sp.*
Broadrock School	6514435	Auditorium	*Yeast/Pithomyces/Aspergillus/Penicillium sp.*
Broadrock School	6514435	Auditorium	*Yeast/Pithomyces/Aspergillus/Penicillium sp.*
Broadrock School	6514435	Auditorium	*Yeast/Pithomyces/Aspergillus/Penicillium sp.*
Broadrock School	6514442	206	*Aspergillus/Cladosporium sp.*
Broadrock School	6514442	206	*Aspergillus/Cladosporium sp.*
Broadrock School	6514442	206	*Aspergillus/Cladosporium sp.*
Broadrock School	6514480	Main Office	*Yeast*
Broadrock School	6514480	Main Office	*Yeast*
Broadrock School	6514480	Main Office	*Yeast*
Broadrock School	6514480	Main Office	*Yeast*
Broadrock School	6514990	555	*ND*
Carver Elementary School	6895405	106	*Alternaria sp.*
Carver Elementary School	6895405	106	*Alternaria sp.*
Carver Elementary School	6895405	106	*Alternaria sp.*
Carver Elementary School	6895405	106	*Alternaria sp.*
Carver Elementary School	6895409	103	*NS Colonies/Penicillium sp.*

Carver Elementary School	6895409	103	*NS Colonies/Penicillium sp.*
Carver Elementary School	6895409	103	*NS Colonies/Penicillium sp.*
Carver Elementary School	6895409	103	*NS Colonies/Penicillium sp.*
Carver Elementary	6895412	3D	*ND*
Carver Elementary School	6895412	3D	*ND*
Carver Elementary School	6895412	3D	*ND*
Carver Elementary School	6895413	102	*Yeast*
Carver Elementary School	6895413	102	*Yeast*
Carver Elementary School	6895413	102	*Yeast*
Carver Elementary School	6895413	102	*Yeast*
Carver Elementary School	6895421	555	*ND*
Carver Elementary School	6895421	555	*ND*
Carver Elementary School	6895421	555	*ND*
Carver Elementary School	6895423	3A	*Mucor sp./Penicillium sp.*
Carver Elementary School	6895423	3A	*Mucor sp./Penicillium sp.*
Carver Elementary School	6895423	3A	*Mucor sp./Penicillium sp.*
Carver Elementary School	6895423	3A	*Mucor sp./Penicillium sp.*
Chandler Middle School	6514335	Auditorium	*Cladosporium sp.*
Chandler Middle School	6514335	Auditorium	*Cladosporium sp.*
Chandler Middle School	6514335	Auditorium	*Cladosporium sp.*
Chandler Middle School	6514349	203	*Cladosporium sp.*
Chandler Middle School	6514385	202	*Penicillium sp.*

Chandler Middle School	6514385	202	*Penicillium sp.*
Chandler Middle School	6895424	204	*ND*
Chandler Middle School	6895424	204	*ND*
Chandler Middle	7019069	555	*ND*
Chandler Middle School	7019069	555	*ND*
Chandler Middle School	7019069	555	*ND*
Chimborazo Elem. School	6514416	Gym	*ND*
Chimborazo Elem. School	6514416	Gym	*ND*
Chimborazo Elem. School	6514422	555	*ND*
Chimborazo Elem. School	6514422	555	*ND*
Chimborazo Elem. School	6514430	Cafeteria	*ND*
Chimborazo Elem. School	6514430	Cafeteria	*ND*
Chimborazo Elem. School	6514434	121	*ND*
Chimborazo Elem. School	6514434	121	*ND*
Clark Springs Elem. School	6506927	108	*NS Colonies/Penicillium sp.*
Clark Springs Elem. School	6506927	108	*NS Colonies/Penicillium sp.*
Clark Springs Elem. School	6506927	108	*NS Colonies/Penicillium sp.*
Clark Springs Elem. School	6506927	108	*NS Colonies/Penicillium sp.*
Clark Springs Elem. School	6514331	555	*ND*
Clark Springs Elem. School	6514331	555	*ND*
Clark Springs Elem. School	6514331	555	*ND*
Clark Springs Elem. School	6514333	113	*ND*

Clark Springs Elem. School	6514333	113	*ND*
Clark Springs Elem. School	6514333	113	*ND*
Clark Springs Elem. School	6514359	120	*ND*
Clark Springs Elem.	6514359	120	*ND*
Clark Springs Elem. School	6514359	120	*ND*
Clark Springs Elem. School	6514387	Media Room	*Aspergillus*
Clark Springs Elem. School	6514387	Media Room	*Aspergillus*
Elizabeth Reid School	6514332	10	*ND*
Elizabeth Reid School	6514332	10	*ND*
Elizabeth Reid School	6514332	10	*ND*
Elizabeth Reid School	6514332	10	*ND*
Elizabeth Reid School	6514336	11	*Alternaria sp./Cladosporium sp./Yeast/NS Colonies*
Elizabeth Reid School	6514336	11	*Alternaria sp./Cladosporium sp./Yeast/NS Colonies*
Elizabeth Reid School	6514336	11	*Alternaria sp./Cladosporium sp./Yeast/NS Colonies*
Elizabeth Reid School	6514344	9	*Alternaria sp.*
Elizabeth Reid School	6514344	9	*Alternaria sp.*
Elizabeth Reid School	6514344	9	*Alternaria sp.*
Elizabeth Reid School	6514346	5	*NS Colonies*
Elizabeth Reid School	6514346	5	*NS Colonies*
Elizabeth Reid School	6514346	5	*NS Colonies*
Elizabeth Reid School	6514346	5	*NS Colonies*
Elizabeth Reid	6514358	555	*ND*

Elizabeth Reid School	6514358	555	*ND*
Elizabeth Reid School	6514358	555	*ND*
Elizabeth Reid School	6514358	555	*ND*
Elizabeth Reid	6514360	2	*Alternaria sp./Cladosporium sp./NS Col.*
Elizabeth Reid School	6514360	2	*Alternaria sp./Cladosporium sp./NS Colonies*
Elizabeth Reid School	6514360	2	*Alternaria sp./Cladosporium sp./NS Colonies*
Fairfield Court	6506913	113	*ND*
Fairfield Court	6506913	113	*ND*
Fairfield Court	6506923	110	*ND*
Fairfield Court	6506923	110	*ND*
Fairfield Court	6506936	117	*Penicillium sp.*
Fairfield Court	6506939	114	*Aspergillus*
Fairfield Court	6506939	114	
Fairfield Court	6506952	Cafeteria	*ND*
Fairfield Court	6506952	Cafeteria	*ND*
Fairfield Court	6506953	555	*ND*
Fox Williams Elem. School	48-6055	110	*ND*
Fox Williams Elem. School	48-6055	115	*ND*
Fox Williams Elem. School	48-6055	115	*ND*
Fox Williams Elem. School	48-6055	203	*ND*
Fox Williams Elem. School	48-6055	214	*ND*
Fox Williams Elem. School	48-6055	555	*ND*
Fox Williams Elem. School	48-6055	B1	*ND*
G. H. Reid Elem. School	6514340	555	*ND*
G. H. Reid Elem. School	6514340	555	*ND*
G. H. Reid Elem. School	6514340	555	*ND*
G. H. Reid Elem.	6514341	102	*Yeast/NS Colonies*
G. H. Reid Elem.	6514341	102	*Yeast/NS Colonies*

School			
G. H. Reid Elem. School	6514341	102	*Yeast/NS Colonies*
G. H. Reid Elem. School	6514343	207	*Cladosporium sp./NS Colonies*
G. H. Reid Elem.	6514343	207	*Cladosporium sp./NS Colonies*
G. H. Reid Elem. School	6514345	201	*Yeast*
G. H. Reid Elem. School	6514345	201	*Yeast*
G. H. Reid Elem. School	6514350	105	*Aspergillus/Alternaria/Cladosporium sp./Ns colonies/Yeast*
G. H. Reid Elem. School	6514350	105	*Aspergillus/Alternaria/Cladosporium sp./Ns colonies/Yeast*
G. H. Reid Elem. School	6514350	105	*Aspergillus/Alternaria/Cladosporium sp./Ns colonies/Yeast*
G. H. Reid Elem. School	6895406	103	*Yeast/Fusarium sp.*
G. H. Reid Elem. School	6895406	103	*Yeast/Fusarium sp.*
G. H. Reid Elem. School	6895406	103	*Yeast/Fusarium sp.*
G. H. Reid Elem. School	6895406	103	*Yeast/Fusarium sp.*
George Mason Elem. School	7019060	114	*Cladosporium sp./Penicillium sp./Yeast*
George Mason Elem. School	7019060	114	*Cladosporium sp./Penicillium sp./Yeast*
George Mason Elem. School	7019061	115	*Yeast/NS Colonies*
George Mason Elem. School	7019061	115	*Yeast/NS Colonies*
George Mason Elem. School	7019061	115	*Yeast/NS Colonies*
George Mason Elem. School	7019066	B3	*Cladosporium sp./Yeast/Aspergillus*
George Mason Elem. School	7019066	B3	*Cladosporium sp./Yeast/Aspergillus*
George Mason Elem. School	7019081	Nurse Clinic	*ND*
George Mason	7019081	Nurse	*ND*
George Mason Elem. School	7019081	Nurse Clinic	*ND*

George Mason Elem. School	7019081	Nurse Clinic	*ND*
George Mason Elem. School	7094359	555	*ND*
George Mason Elem.	7094359	555	*ND*
George Mason Elem. School	7094359	555	*ND*
George Mason Elem. School	7094359	555	*ND*
George Mason Elem. School	7094363	B1	*NS Colonies*
George Mason Elem. School	7094363	B1	*NS Colonies*
George Mason Elem. School	7094363	B1	*NS Colonies*
George Wythe High School	6506919	112	*ND*
George Wythe High School	6506919	112	*ND*
George Wythe High School	6506920	111	*ND*
George Wythe High School	6506920	111	*ND*
George Wythe High School	6506923	137	*ND*
George Wythe High School	6506923	137	*ND*
George Wythe High School	6506923	137	*ND*
George Wythe High School	6506926	102	*ND*
George Wythe High School	6506926	102	*ND*
George Wythe High School	6506928	103	*ND*
George Wythe High School	6506928	103	*ND*
George Wythe High School	6506959	555	*ND*
George Wythe High School	6506959	555	*ND*
George Wythe	6506959	555	*ND*

High School			
George Wythe High School	6506959	555	*ND*
Ginter Park Elem. School	48-5882	1	*ND*
Ginter Park Elem.	48-5882	12	*ND*
Ginter Park Elem. School	48-5882	555	*ND*
Ginter Park Elem. School	48-5882	Auditorium	*ND*
Ginter Park Elem. School	48-5882	B8	*ND*
Ginter Park Elem. School	48-5882	Cafeteria	*ND*
Holton Elementary School	48-5882	104	*Alternaria sp.*
Holton Elementary School	48-5882	116	*Alternaria sp./Epicoccum/Cladosporium sp./Curvularia sp.*
Holton Elementary School	48-5882	117	*Sterile Mycelium/Cladosporium sp.*
Holton Elementary School	48-5882	210	*Aspergillus/Penicillium sp./Sterile Mycelium*
Holton Elementary School	48-5882	212	*Aspergillus/Mucor sp./Penicillium sp./Cladosporium sp.*
Holton Elementary School	48-5882	555	*ND*
J. B. Fischer Elem. School	48-6055	106	*ND*
J. B. Fischer Elem. School	48-6055	110	*ND*
J. B. Fischer Elem. School	48-6055	116	*ND*
J. B. Fischer Elem. School	48-6055	119	*ND*
J. B. Fischer Elem. School	48-6055	Unknown	*ND*
J. L. Francis Elem.	650-6914	22	*Penicillium sp.*

School			
J. L. Francis Elem. School	650-6914	22	*Penicillium sp.*
J. L. Francis Elem. School	650-6914	22	*Penicillium sp.*
J. L. Francis Elem. School	650-6914	22	*Penicillium sp.*
J. L. Francis Elem. School	650-6916	9	*Unknown*
J. L. Francis Elem. School	650-6916	9	*Unknown*
J. L. Francis Elem.	650-6916	9	*Unknown*
J. L. Francis Elem. School	650-6916	9	*Unknown*
J. L. Francis Elem. School	650-6931	34	*Yeast/Aspergillus*
J. L. Francis Elem. School	650-6931	34	
J. L. Francis Elem. School	650-6931	34	*Yeast/Aspergillus*
J. L. Francis Elem. School	651-4330	12	*Penicillium sp.*
J. L. Francis Elem. School	651-4330	12	*Penicillium sp.*
J. L. Francis Elem. School	651-4330	12	*Penicillium sp.*
J. L. Francis Elem. School	651-4334	16	*Penicillium sp.*
J. L. Francis Elem. School	651-4334	16	*Penicillium sp.*
J. L. Francis Elem. School	651-4334	16	*Penicillium sp.*
J. L. Francis Elem. School	651-4334	16	*Penicillium sp.*
J. L. Francis Elem. School	651-4410	555	*Bipolaris/Dreschlera*
J. L. Francis Elem. School	651-4410	555	*Bipolaris/Dreschlera*
J. L. Francis Elem. School	651-4410	555	*Bipolaris/Dreschlera*
J. L. Francis Elem. School	651-4410	555	*Bipolaris/Dreschlera*
John B. Cary	48-5882	104	*ND*

John B. Cary	48-5882	204	*ND*
John B. Cary	48-5882	205	*ND*
John B. Cary	48-5882	555	*ND*
John B. Cary	48-5882	Cafeteria	*ND*
John B. Cary	48-5882	Music Room	*ND*
John F. Kennedy High School	650-6908	121	*ND*
John F. Kennedy High School	650-6908	121	*ND*
John F. Kennedy High School	650-6910	Teacher's L.	*NS Colonies*
John F. Kennedy High School	650-6910	Teacher's L.	*NS Colonies*
John F. Kennedy High School	650-6918	238	*Cladosporium sp.*
John F. Kennedy High School	650-6918	238	*Cladosporium sp.*
John F. Kennedy High School	650-6935	555	*ND*
John F. Kennedy High School	650-6935	555	*ND*
John F. Kennedy High School	650-6935	555	*ND*
John F. Kennedy High School	650-6935	555	*ND*
John F. Kennedy High School	650-6937	120	*Cladosporium sp.*
John F. Kennedy High School	650-6937	120	*Cladosporium sp.*
John F. Kennedy High School	650-6937	120	*Cladosporium sp.*
John F. Kennedy High School	650-6947	248	*ND*
John F. Kennedy High School	650-6947	248	*ND*
John Marshall High School	7094322	138	*Cladosporium sp./Alternaria sp.*
John Marshall High School	7094322	138	*Cladosporium sp./Alternaria sp.*
John Marshall High School	7094324	234	*ND*
John Marshall	7094324	234	*ND*

High School			
John Marshall High School	7094324	234	*ND*
John Marshall High School	7094334	101	*Aureobasidium sp./Yeast*
John Marshall High School	7094334	101	*Aureobasidium sp./Yeast*
John Marshall High School	7094338	112	*ND*
John Marshall High School	7094338	112	*ND*
John Marshall High	7094338	112	*ND*
John Marshall High School	7094340	222	*ND*
John Marshall High School	7094340	222	*ND*
John Marshall High School	7094345	555	*ND*
John Marshall High School	7094345	555	*ND*
John Marshall High School	7094345	555	*ND*
Lucille M. Brown Middle School	6514354	Cafeteria	*ND*
Lucille M. Brown Middle School	6514354	Cafeteria	*ND*
Lucille M. Brown Middle School	7019075	303	*Cladosporium sp.*
Lucille M. Brown Middle School	7019075	303	*Cladosporium sp.*
Lucille M. Brown Middle School	7019075	303	*Cladosporium sp.*
Lucille M. Brown Middle School	7019077	204	*Cladosporium sp.*
Lucille M. Brown Middle School	7019077	204	*Cladosporium sp.*
Lucille M. Brown Middle School	7019085	107	*NS Colonies/Cladosporium sp.*
Lucille M. Brown	7019085	107	*NS Colonies/Cladosporium sp.*
Lucille M. Brown Middle School	7019085	107	*NS Colonies/Cladosporium sp.*
Lucille M. Brown	7019091	401	*ND*

Middle School			
Lucille M. Brown Middle School	7019091	401	*ND*
Lucille M. Brown Middle School	7019091	401	*ND*
Lucille M. Brown Middle School	7019101	555	*ND*
Lucille M. Brown Middle School	7019101	555	*ND*
Lucille M. Brown Middle School	7019101	555	*ND*
Maggie Walker	7094316	206	*ND*
Maggie Walker School	7094316	206	*ND*
Maggie Walker School	7094316	206	*ND*
Maggie Walker School	7094320	555	*ND*
Maggie Walker School	7094325	319	*ND*
Maggie Walker School	7094325	319	*ND*
Maggie Walker School	7094326	312	*Penicillium sp./NS Colonies*
Maggie Walker School	7094326	312	*Penicillium sp./NS Colonies*
Maggie Walker School	7094328	126	*Fusarium sp.*
Maggie Walker School	7094328	126	*Fusarium sp.*
Maggie Walker School	7094328	126	*Fusarium sp.*
Maggie Walker School	7094341	112	*ND*
Mary Munford School	48-5882	106	*Epicoccum sp.*
Mary Munford School	48-5882	107	*Cladosporium sp./Penicillium sp.*
Mary Munford	48-5882	201	*ND*
Mary Munford School	48-5882	206	*Alternaria sp./Epicoccum/Penicillium sp./Aureobasidium sp.*
Mary Munford School	48-5882	555	*ND*

Maymont School	6514337	105	*ND*
Maymont School	6514337	105	*ND*
Maymont School	6514337	105	*ND*
Maymont School	6895419	555	*ND*
Maymont School	6895419	555	*ND*
Maymont School	6895419	555	*ND*
Maymont School	7019076	108	*ND*
Maymont School	7019076	108	*ND*
Maymont School	7019076	108	*ND*
Maymont School	7019076	108	*ND*
Maymont School	7019089	106	*ND*
Maymont School	7019089	106	*ND*
Maymont School	7019104	107	*Yeast*
Maymont School	7019104	107	*Yeast*
Maymont School	7019110	109	*ND*
Maymont School	7019110	109	*ND*
Maymont School	7019110	109	*ND*
Maymont School	7019110	109	*ND*
Miles Jerome Jones Elem. Sch.	7019058	203	*ND*
Miles Jerome Jones Elem. Sch.	7019058	203	*ND*
Miles Jerome Jones Elem. Sch.	7019065	108	*NS Colonies*
Miles Jerome Jones Elem. Sch.	7019065	108	*Yeast*
Miles Jerome Jones Elem. Sch.	7019099	555	*ND*
Miles Jerome Jones Elem. Sch.	7019099	555	*ND*
Miles Jerome Jones Elem. Sch.	7019099	555	*ND*
Miles Jerome Jones Elem. Sch.	7094358	109	*Aspergillus*
Miles Jerome Jones Elem. Sch.	7094358	109	*Aspergillus*
Miles Jerome Jones Elem. Sch.	7094360	206	*ND*
Miles Jerome Jones Elem. Sch.	7094360	206	*ND*
Mosby Middle School	6514348	110	*ND*
Mosby Middle	6514348	110	*ND*

School			
Mosby Middle School	6514351	205	*ND*
Mosby Middle School	6514351	205	*ND*
Mosby Middle School	6514353	107	*ND*
Mosby Middle School	6514353	107	*ND*
Mosby Middle School	6514389	555	*ND*
Mosby Middle School	6514389	555	*ND*
Mosby Middle School	6514389	555	*ND*
Mosby Middle School	6514389	555	*ND*
Mosby Middle School	6895407	209	*Penicillium sp./Yeast*
Mosby Middle School	6895407	209	*Penicillium sp./Yeast*
Mosby Middle School	6895407	209	*Penicillium sp./Yeast*
Mosby Middle School	6895408	208	*ND*
Mosby Middle School	6895408	208	*ND*
Mosby Middle School	6895408	208	*ND*
Mosby Middle School	6895408	208	*ND*
Mosby Middle School	6895425	202	*ND*
Mosby Middle School	6895425	202	*ND*
Mosby Middle School	6895426	555	*ND*
Mosby Middle	6895426	555	*ND*
Mosby Middle School	6895426	555	*ND*
Oak Grove Elem. School	6514328	206	*ND*
Oak Grove Elem.	6514328	206	*ND*

School			
Oak Grove Elem. School	6514347	555	*ND*
Oak Grove Elem. School	6514347	555	*ND*
Oak Grove Elem. School	6514347	555	*ND*
Oak Grove Elem. School	6514347	555	*ND*
Oak Grove Elem.	6514357	201	*ND*
Oak Grove Elem. School	6514357	201	*ND*
Oak Grove Elem. School	6514357	201	*ND*
Oak Grove Elem. School	6514361	204	*ND*
Oak Grove Elem. School	6514361	204	*ND*
Oak Grove Elem. School	6514361	204	*ND*
Oak Grove Elem. School	6514362	203	*ND*
Oak Grove Elem. School	6514362	203	*ND*
Oak Grove Elem. School	6514362	203	*ND*
Oak Grove Elem. School	6514376	106	*ND*
Oak Grove Elem. School	6514376	106	*ND*
Oak Grove Elem. School	6514376	106	*ND*
Oak Grove Elem. School	6895415	104	*ND*
Oak Grove Elem. School	6895415	104	*ND*
Oak Grove Elem.	6895415	104	*ND*
Oak Grove Elem. School	6895415	104	*ND*
Oak Grove Elem. School	6895418	105	*ND*
Oak Grove Elem. School	6895418	105	*ND*

Oak Grove Elem. School	6895418	105	*ND*
Oak Grove Elem. School	6895418	105	*ND*
Onslow Minnis Middle School	48-5882	104	*Cladosporium sp./Penicillium*
Onslow Minnis Middle School	48-5882	106	*ND*
Onslow Minnis	48-5882	207	*Cladosporium sp./Penicillium/Paecilomyces*
Onslow Minnis Middle School	48-5882	305	*Alternaria sp./Cladosporium sp./Penicillium sp.*
Onslow Minnis Middle School	48-5882	555	*ND*
Onslow Minnis Middle School	48-5882	203A	*ND*
Overby-Sheppard School	6506915	555	*ND*
Overby-Sheppard School	6506915	555	*ND*
Overby-Sheppard School	6506915	555	*ND*
Overby-Sheppard School	6514342	100	*NS Colonies*
Overby-Sheppard School	6514342	100	*NS Colonies*
Overby-Sheppard School	6514366	108	*Aspergillus/Yeast*
Overby-Sheppard School	6514366	108	*Aspergillus/Yeast*
Overby-Sheppard School	6514366	108	*Aspergillus/Yeast*
Overby-Sheppard School	6514366	108	*Aspergillus/Yeast*
Overby-Sheppard School	6514377	Media Center	*Aspergillus*
Overby-Sheppard	6514377	Media	*Aspergillus*
Overby-Sheppard School	6514377	Media Center	*Aspergillus*
Overby-Sheppard School	6514394	102	*Penicillium sp./Aspergillus*
Overby-Sheppard School	6514394	102	*Penicillium sp./Aspergillus*
Overby-Sheppard	6514394	102	*Penicillium sp./Aspergillus*

School			
Overby-Sheppard School	6514411	110	*Yeast*
Overby-Sheppard School	6514411	110	*Yeast*
Overby-Sheppard School	6514411	110	*Yeast*
Overby-Sheppard	6514411	110	*Yeast*
Patrick Henry Elem. School	6506911	108	*Cladosporium sp.*
Patrick Henry Elem. School	6506911	108	*Cladosporium sp.*
Patrick Henry Elem. School	6506911	108	*Cladosporium sp.*
Patrick Henry Elem. School	6506940	555	
Patrick Henry Elem. School	6506940	555	
Patrick Henry Elem. School	6506940	555	*ND*
Patrick Henry Elem. School	6506944	202	*ND*
Patrick Henry Elem. School	6506944	202	*ND*
Patrick Henry Elem. School	6506949	203	*ND*
Patrick Henry Elem. School	6506949	203	*ND*
Patrick Henry Elem. School	6506949	203	*ND*
Patrick Henry Elem. School	6506955	106	*Aspergillus*
Patrick Henry Elem. School	6506955	106	*Aspergillus*
Patrick Henry	6506955	106	*Aspergillus*
Preschool Development Center	48-6055	1	*ND*
Preschool Development Center	48-6055	2	*ND*
Preschool Development	48-6055	4	*ND*

Center			
Preschool Development Center	48-6055	5	*ND*
Preschool Development Center	48-6055	9	*ND*
Preschool Development Center	48-6055	555	*ND*
RTC	48-6055	108	*Basidiospores/Stachybotrys/Periconia/Smuts*
RTC	48-6055	113	*Periconia/Smuts/Basidiospores/Alternaria sp.*
RTC	48-6055	201	*Stachybotrys*
RTC	48-6055	207	*ND*
RTC	48-6055	235	*Ascospores/Epicoccum*
RTC	48-6055	555	*Alternaria sp./Basidiospores/Alternaria sp.*
Southampton Elem. School	6506929	555	*ND*
Southampton Elem. School	6506929	555	*ND*
Southampton Elem. School	6506929	555	*ND*
Southampton Elem. School	6506932	26	*ND*
Southampton Elem. School	6506932	26	*ND*
Southampton Elem. School	6506932	26	*ND*
Southampton Elem. School	6514356	28	*ND*
Southampton Elem. School	6514356	28	*ND*
Southampton Elem. School	6514363	15	*ND*
Southampton Elem. School	6514363	15	*ND*
Southampton Elem. School	6514363	15	*ND*
Southampton Elem. School	6514380	18	*ND*
Southampton Elem. School	6514380	18	*ND*

Southampton Elem. School	6514380	18	*ND*
Southampton Elem. School	6514380	18	*ND*
Southampton Elem. School	6514395	29	*ND*
Southampton Elem. School	6514395	29	*ND*
Southampton Elem. School	6514395	29	*ND*
Summer Hill Elementary School	6506912	5	*Mucor sp.*
Summer Hill Elem.	6506912	5	*Mucor sp.*
Summer Hill Elementary School	6506922	9	*Cladosporium sp./Yeast/NS Colonies*
Summer Hill Elementary School	6506922	9	*Cladosporium sp./Yeast/NS Colonies*
Summer Hill Elementary School	6506922	9	*Cladosporium sp./Yeast/NS Colonies*
Summer Hill Elementary School	6506922	9	*Cladosporium sp./Yeast/NS Colonies*
Summer Hill Elementary School	6506934	11	*Aspergillus/Cladosporium sp.*
Summer Hill Elementary School	6506934	11	*Aspergillus/Cladosporium sp.*
Summer Hill	6506934	11	*Aspergillus/Cladosporium sp.*
Summer Hill Elementary School	6514329	Auditorium	*Penicillium sp./NS Colonies*
Summer Hill Elementary School	6514329	Auditorium	*Penicillium sp./NS Colonies*
Summer Hill Elementary School	6514352	Basement #19	*Cladosporium sp./NS Colonies*

Summer Hill Elementary School	6514352	Basement #19	*Cladosporium sp./NS Colonies*
Summer Hill Elementary School	6514352	Basement #19	*Cladosporium sp./NS Colonies*
Summer Hill Elementary School	6514355	1	*Acremonium sp./Penicillium sp.*
Summer Hill Elementary School	6514355	1	*Acremonium sp./Penicillium sp.*
Summer Hill Elementary School	6514388	Basement #18	*Cladosporium sp.*
Summer Hill Elementary School	6514388	Basement #18	*Cladosporium sp.*
Summer Hill Elementary School	6514388	Basement #18	*Cladosporium sp.*
Summer Hill Elementary School	6514392	555	*ND*
Summer Hill Elementary School	6514392	555	*ND*
Summer Hill Elementary School	6514392	555	*ND*
Summer Hill Elementary	6514392	555	*ND*
Summer Hill School	NO DATA	NO DATA	*Penicillium sp./Trichoderma sp./ Unknown*
Summer Hill School	NO DATA	NO DATA	*Aspergillus/Penicillium*
Swansboro Elementary School	7019068	555	*ND*
Swansboro Elementary School	7019068	555	*ND*
Swansboro	7019068	555	*ND*

Elementary School			
Swansboro Elementary School	7019068	555	*ND*
Swansboro Elementary School	7019071	203	*Yeast*
Swansboro Elementary School	7019071	203	*Yeast*
Swansboro Elementary School	7019071	203	*Yeast*
Swansboro Elementary School	7019071	203	*Yeast*
Swansboro Elementary School	7019083	Media Center	*Cladosporium sp./Penicillium/Yeast*
Swansboro Elementary School	7019083	Media Center	*Cladosporium sp./Penicillium/Yeast*
Swansboro Elementary School	7019083	Media Center	*Cladosporium sp./Penicillium/Yeast*
Swansboro Elementary School	7019083	Media Center	*Cladosporium sp./Penicillium/Yeast*
Swansboro Elementary	7019092	106	*Penicillium sp.*
Swansboro Elementary School	7019092	106	*Penicillium sp.*
Swansboro Elementary School	7019092	106	*Penicillium sp.*
Swansboro Elementary School	7019096	107	*Acremonium sp./Penicillium sp./Yeast*
Swansboro Elementary School	7019096	107	*Acremonium sp./Penicillium sp./Yeast*

Swansboro Elementary School	7019096	107	*Acremonium sp./Penicillium sp./Yeast*
Swansboro Elementary School	7019105	103	*ND*
Swansboro Elementary School	7019105	103	*ND*
Swansboro Elementary School	7019105	103	*ND*
T.C Boushall Middle School	7019084	555	*ND*
T.C Boushall Middle School	7019084	555	*ND*
T.C Boushall Middle School	7019084	555	*ND*
T.C Boushall Middle School	7019086	Grade VI Room	*ND*
T.C Boushall Middle School	7019086	Grade VI Room	*ND*
T.C Boushall Middle School	7019086	Grade VI Room	*ND*
T.C Boushall Middle School	7019086	Grade VI Room	*ND*
T.C Boushall Middle School	7019087	Health B	*ND*
T.C Boushall Middle School	7019090	156	*ND*
T.C Boushall	7019090	156	*ND*
T.C Boushall Middle School	7019090	156	*ND*
T.C Boushall Middle School	7019094	Choir Room	*ND*
T.C Boushall Middle School	7019094	Choir Room	*ND*
T.C Boushall Middle School	7019094	Choir Room	*ND*
Thomas Jefferson School	48-5882	106	*Alternaria sp./Cladosporium sp.*
Thomas Jefferson School	48-5882	110	*ND*

Thomas Jefferson School	48-5882	206	*ND*
Thomas Jefferson School	48-5882	219	*Alternaria sp./Cladosporium sp./Penicillium sp.*
Thomas Jefferson School	48-5882	309	*Cladosporium sp./Penicillium sp.*
Thomas Jefferson School	48-5882	555	*ND*
Thompson Middle School	651-4417	102	*ND*
Thompson Middle	651-4417	102	*ND*
Thompson Middle School	651-4425	555	*ND*
Thompson Middle School	651-4425	555	*ND*
Thompson Middle School	651-4427	205B	*ND*
Thompson Middle School	651-4429	107	*ND*
Thompson Middle School	651-4429	107	*ND*
Thompson Middle School	651-6925	112	*Aureobasidium sp./Yeast*
Thompson Middle School	651-6925	112	*Aureobasidium sp./Yeast*
Thompson Middle School	651-6951	105	*Aspergillus*
Thompson Middle School	651-6951	105	*Aspergillus*
Thompson Middle School	651-6951	105	*Aspergillus*
West Over Hills Elem. School	7094315	21	*Cladosporium sp./Curvularia sp./Epicoccum*
West Over Hills Elem. School	7094321	17	*Sterile Mycelium*
West Over Hills Elem. School	7094323	555	*ND*
West Over Hills Elem. School	7094330	6	*Penicillium sp.*
West Over Hills Elem. School	7094342	3	*Acremonium sp.*
Woodville Elementary	7019063	118	*Cladosporium sp./NS Colonies/Yeast*

School			
Woodville Elementary School	7019063	118	*Cladosporium sp./NS Colonies/Yeast*
Woodville Elementary School	7019063	118	*Cladosporium sp./NS Colonies/Yeast*
Woodville Elementary School	7019080	A-5	*Yeast*
Woodville Elementary School	7094354	A-7	*Cladosporium sp./NS Colonies*
Woodville Elementary School	7094354	A-7	*Cladosporium sp./NS Colonies*
Woodville Elem.	7094356	555	*ND*
Woodville Elementary School	7094356	555	*ND*
Woodville Elementary School	7094356	555	*ND*
Woodville Elementary School	7094366	116	*NS Colonies*
Woodville Elementary School	7094366	116	*NS Colonies*

Vita

Stephen Asante-Ansong was born on October 19, 1974 in Kumasi located in the Ashanti Region of Ghana, West Africa. I am a Ghanaian citizen. He graduated from St. Peter's Secondary School, Nkwatia-Kwahu, Ghana in 1994. He received his Bachelor of Science in Agricultural Mechanization from The Kwame Nkrumah University of Science and Technology, Kumasi-Ghana in 2001. Mr. Asante-Ansong is currently employed with Chesterfield County's Office of Environmental and Security Management in Virginia as a Cooperative Environmental Engineer.