



Division of Occupational Safety and Health  
Occupational Safety and Health Statistics  
Occupational Health Clinics

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December 23, 2003

Mr. T. Allan Palmer  
Fiscal Administration Manager  
State of Connecticut  
Department of Social Services  
25 Sigourney Street  
Hartford, CT 06106

JAN 12 2004

**RE:** Inspection #305607707

Dear Mr. Palmer:

Enclosed is a copy of the narrative for the State of Connecticut, Department of Social Services from an inspection conducted by Mr. Scott Horr.

If you need any further assistance or have any questions, please contact Scott Horr at (860) 566-4550.

Sincerely,

Richard T. Palo, MS, CIH  
CONN-OSHA Director

rtp/cfj

enc.

NARRATIVE  
STATE of CONNECTICUT  
DEPARTMENT of SOCIAL SERVICES  
25 SIGOURNEY STREET  
HARTFORD, CT 06106  
Inspection#305607707-Z3807-588

This inspection was the result of complaints. The opening conference was held on December 9, 2003 with the Fiscal Administration Manager of the Department of Social Services, T. Allan Palmer and the Office Supervisor, Anne Hardy. The American Federation of State, County and Municipal Employees (AFSCME), Local 538 Union Representative Wanda Smith, AFSCME P-2 Representative, Vicky Manfredi and A&R Union Steward, Tim Bowles were made aware of the inspection. The nature, scope and purpose of the inspection were explained.

The complaint alleges:

- asthma symptoms begin when entering the building and don't subside until leaving
- white dust and dirt due to building repairs
- noise from jack-hammering is deafening

Biological sampling was performed on December 10, 2003 to assess the levels of fungi present. General environmental air sampling was performed using a "Graseby-Anderson Model 10-709 N-61 AFCM" single stage viable impactor sampler at an approximate flow rate of 28.3 liters of air per minute onto a standard petri dish filled with "Malt Extract Agar" (MEA) for three minutes. The samples were forwarded to the Wisconsin Occupational Health Laboratory (WOHL). Analysis was accomplished through enumeration and classification of incubated colonies. Biological materials which were unable to produce identifiable colonies and/or spores were counted and included as either non-septate hyphae or as Mycelia Sterilia. The results are expressed in terms of numbers of colony forming units per cubic meter of air (cfu/m<sup>3</sup>) and are listed in Table 2.

There is no Permissible Exposure limit for fungi established under either the State of Connecticut, Department of Labor, Division of Occupational Safety and Health, (CONN-OSHA) or the United States Department of Labor-Occupational Safety and Health Administration (USDOL-OSHA) regulations. There is also no Threshold Limit Value (TLV) for fungi established as a recommended guideline by the American Conference of Governmental Industrial Hygienists (ACGIH). Current reference sources indicate that indoor air fungi levels should be equal to or less than outdoor air fungal levels.

Results reflect conditions only at the time of inspection. Sample results are for environmental purposes and are used to assist in the determination of potential microbial reservoirs or amplifiers. The samples are interpreted in conjunction with a visible walkthrough of the facility to identify potential microbial sources. Inaccessible areas such as between walls, behind structural components, behind architectural components, above ceilings and the interior of ventilation units are not generally included unless specifically referenced in this report. No visible fungal growth was evident during this inspection.

During the inspection on December 10, 2003, indoor air quality was addressed by conducting air sampling for carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), temperature and relative humidity using a "TSI Q-Trak, Model 8551, Indoor Air Quality Monitor". Specific

sampling locations and measurements obtained are shown in Table 1. The State of Connecticut Occupational Safety and Health Division (CONN-OSHA) 8-hour time weighted average permissible exposure limit (PEL) for CO<sub>2</sub> is 10,000 parts per million parts of air (ppm). The CONN-OSHA PEL for CO is 35 ppm. The samples collected for the individual contaminants were all well below the established CONN-OSHA PELs.

The National Institute for Occupational Safety and Health (NIOSH), in its document "Guidance For Indoor Air Quality Investigations" states that "carbon dioxide (CO<sub>2</sub>) is a normal constituent of exhaled breath and, if monitored, can be used as a screening technique to evaluate whether adequate quantities of fresh outdoor air are being introduced into a building or work area". The outdoor, ambient concentration of CO<sub>2</sub> is normally 250-350 parts per million (ppm). Usually the CO<sub>2</sub> level is higher inside than outside, even in buildings with few complaints about indoor air quality. If CO<sub>2</sub> concentrations are maintained below 600 ppm with comfortable temperature and humidity levels, complaints about air quality should be minimal. If indoor CO<sub>2</sub> concentrations are more than 1,000 ppm (three to four times the outside level), there is most likely a problem of inadequate ventilation and complaints such as headaches, fatigue, eye and throat irritation are frequently found to be prevalent. This does not mean that if this level is exceeded the building is hazardous or that it should be evacuated, but rather this level should be a guideline that helps maximize comfort for all occupants. This document also states that ensuring an adequate fresh outdoor air supply is the single most effective method of correcting and preventing problems and minimizing complaints relating to poor indoor air quality. Ventilation systems should provide a supply of outdoor air to dilute contaminants that otherwise build up in an enclosed space occupied with people. The American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc. (ASHRAE) Standard 62-2001, entitled "Ventilation For Acceptable Indoor Air Quality" and ASHRAE Standard 55-1992, entitled "Thermal Environmental Conditions for Human Occupancy" recommends that outdoor air be supplied to offices at a minimum rate of 20 cubic feet per minute per person. These standards state that "carbon dioxide concentrations in acceptable outdoor air typically range from 300-500 ppm." These standards also state, "where only dilution ventilation is used to control indoor air quality, an indoor to outdoor differential concentration not greater than 700 ppm of carbon dioxide indicates occupant comfort".

ASHRAE Standard 62-2001, recommends that a building environment that is occupied by sedentary or slightly active persons, during the summer season should have temperatures in a comfort range of 73 to 79 degrees Fahrenheit to achieve thermal acceptability, that is, where 90% of the persons who occupy that environment will find it acceptable or comfortable.

No construction activity was ongoing at the time of inspection therefore no sampling was conducted for dust, dirt or noise.

No violations of CONN-OSHA standards were found as a result of this inspection.

TABLE 1  
DEPARTMENT of SOCIAL SERVICES  
25 SIGOURNEY STREET  
HARTFORD, CT  
INDOOR AIR QUALITY MEASUREMENTS

GENERAL AREA SAMPLING LOCATIONS	TIME	CARBON DIOXIDE (ppm) <sup>1</sup> PEL <sup>2</sup> 10,000	CARBON MONOXIDE (ppm) PEL 35	TEMP (IN °F)	RELATIVE HUMIDITY (IN %)	NUMBER OF OCCUPANTS
MICHELE PARSONS DESK	9:00 AM	536	0	68.9	24.3	1
CATHY MODENA'S DESK	9:10 AM	623	0	71.4	25.8	1
MIRYAM RESTREPO'S DESK	9:20 AM	630	0.8	73.0	24.6	3
OJETTA JAMES'S DESK	9:25 AM	668	0	73.0	24.7	4
GEORGIA SMITH'S DESK	9:35 AM	710	0	72.3	24.7	4
TIM BOWLES DESK	9:45 AM	635	0	72.7	24.0	0
MICHELE PARSONS DESK	12:30 PM	572	0	70.2	23.3	0
CATHY MODENA'S DESK	12:40 PM	573	0	72.0	22.9	0
MIRYAM RESTREPO'S DESK	12:45 PM	553	0	73.0	21.9	0
OJETTA JAMES'S DESK	12:50 PM	550	0	72.9	21.5	0
GEORGIA SMITH'S DESK	1:00 PM	546	0	72.7	21.4	0
TIM BOWLES DESK	1:05 PM	568	0	73.2	22.1	3
OUTSIDE	2:00 PM	464	0	44.8	22.9	

<sup>1</sup>ppm<sup>1</sup>-parts per million parts of air  
<sup>2</sup>PEL<sup>2</sup>- permissible exposure limit

Table 2  
 STATE of CONNECTICUT  
 DEPARTMENT of SOCIAL SERVICES  
 HARTFORD, CT  
 FUNGAL SPECIATION and QUANTIFICATION

SAMPLE LOCATION	TOTAL NUMBER of COLONY FORMING UNITS/CUBIC METER of AIR	TYPE and QUANTITY of COLONY FORMING UNITS/CUBIC METER of AIR
AM MICHELE PARSONS DESK	NONE DETECTED	NONE DETECTED
AM CATHY MODENA'S DESK	24	ASPERGILLUS VERSICOLOR 24 CFU YEAST 12 CFU
AM MIRYAM RESTREPO'S DESK	12	CLADOSPORIUM SP. 12 CFU
AM OJETTA JAMES' DESK	24	ASPERGILLUS VERSICOLOR 12 CFU RHODOTORULA SP. 12 CFU
AM GEORGIA SMITH'S DESK	12	RHODOTORULA SP. 12 CFU
AM TIM BOWLES' DESK	NONE DETECTED	NONE DETECTED
AM OUTSIDE	2584	BASIDIOMYCETE 24 CFU CLADOSPORIUM SP. 660 CFU PENICILLIUM SP. 1900 CFU
PM MICHELE PARSON'S DESK	NONE DETECTED	NONE DETECTED
PM CATHY MODENA'S DESK	12	YEAST 12 CFU
PM MIRYAM RESTREPO'S DESK	12	CLADOSPORIUM SP. 12 CFU
PM OJETTA JAMES' DESK	NONE DETECTED	NONE DETECTED
PM GEORGIA SMITH'S DESK	NONE DETECTED	NONE DETECTED
PM TIM BOWLES' DESK	NONE DETECTED	NONE DETECTED
PM OUTSIDE	153	BASIDIOMYCETE 12 CFU MISCELLANEOUS UNIDENTIFIED 12 CFU CLADOSPORIUM SP. 35 CFU PENICILLIUM SP. 94 CFU

## GLOSSARY

Aspergillus- There are more than one hundred species of this mold, including flavus, fumigatus, glaucus, nidulans, niger, and ochraceus. Many types of these molds commonly grow in indoor environments.

Aspergillus fumigatus - found on water damaged materials and organic rich substrates in buildings.

Aerobic actinomycetes bacteria. Worldwide. Found in soil, plant surfaces and decaying vegetation. May be associated with hypersensitivity pneumonitis.

Acremonium species Ubiquitous in nature. Associated with decaying plant material, decaying food and soil. Commonly associated with cellulose-based building materials suffering from chronic wet conditions.

Alternaria species Worldwide, isolated from many kinds of plants, foodstuffs, soil, textiles, decaying wood, weed pulp and compost.

Aureobasidium is often found on leaves, in kitchen, in bathrooms and on interior painted surfaces.

Basidiomycetes Worldwide, found in soil and decaying vegetation. Many are plant pathogens.

Chaetomium species Found in a variety of substrates containing cellulose including paper and plant compost. It has been found on paper in sheetrock and can be allergenic.

Chrysosporium may cause skin infections and onychomycosis in humans. In addition to these superficial infections, Chrysosporium spp. Have occasionally been isolated from systemic infections in bone marrow transplant recipients and in patients with chronic granulomatous.

Cladosporium is ubiquitous and is most frequently encountered in close proximity to beech trees, soil, paints, window frames and low drainage environments. Alternaria is often found growing with Cladosporium, and is found to release spores in dry air. Certain species of Alternaria and Cladosporium have been identified as causes of allergic rhinitis and asthma.

Cryptococcus albidus A variety of soils and moist substrates. Normal skin flora.

Curvularia, Botrytis and Bipolaris are common saprophytic fungi which are not considered pathogenic.

Epicoccum nigrum Common in air, soil, moldy paper, plant materials, pulp and occasionally grows on water damaged drywall or wood products. It is a secondary invader of plants.

Exophila species Common in plant materials, decaying wood, sewage sludge and pulp samples.

May produce toxins.

Fusarium species Widely distributed in the soil and on plants. May produce toxins. Potential pathogens.

Gliocladium species A soil dwelling fungus. It degrades cellulose and its confirmed presence in building environments may indicate the presence of chronically wetted wood.

Geotrichium candidum is a cosmopolitan fungi found in soil, water, cereal, fruit, bread, milk products, paper and textiles. It is the causative agent in geotrichosis of the pulmonary, bronchial, oral, gastrointestinal and cutaneous tissues.

Gliocladium is a commonly found organism and is considered a mold allergen.

Malbranchea species Widespread distribution in soil and decaying vegetation

Memmoniella species Closely related to *Stachybotrys*. Worldwide distribution in plant and soil. Recently reported to produce several mycotoxins. It can be recovered from chronically wet cellulose-containing materials.

Mucor species World-wide. Common in air. It is commonly encountered in building dust and carpet samples. It can cause allergic alveolitis. No mycotoxin production is recorded for this species. It is a rare opportunistic pathogen.

Paecilomyces species A toxigenic fungus and very common thermotolerant fungus from soil, air polluted water, pulp and paper samples, and various plant materials.

Penicillium species Soil, food products, biodeteriogen on damp building materials. It is found on concrete wall surfaces and in dust and soil accumulations suffering from water condensation and/or infiltration problems. It has been recovered from carpets and drywall surfaces that have been subject to flooding. Some species may be toxigenic.

Pestalotiopsis this mold is a fungi that lacks a known sexual state and thus belongs to the fungi imperfecti.

Phoma species A common indoor allergen and is commonly found on various plant parts and in soil. It can grow extensively on painted walls, particularly in humid areas.

Rhizopus species Worldwide, but more often occurring in warmer zones. It is often isolated from soil in dry areas, garden compost, municipal waste, house dust, wood pulp, differing nuts, fruits and seeds. Often isolated from forgotten leftover food, fruit and vegetable garbage.

Rhodotorula is commonly found in surveys for airborne fungi and prefers moist locations such as cold mist vaporizers. Part of normal flora of humans.

Scopulariopsis species Commonly recovered from building dust and drywall surfaces suffering from chronic wetness. It is also recovered from various food products.

Sporobolomyces Found in man, tree leaves, orange peel and air. Implicated as the cause of dermatitis, and also isolated from the blood, sputum and urine with uncertain disease association.

Stachybotrys chartarum A toxigenic mold that is usually, but not always recovered from chronically wetted delignified cellulose-based materials. It has been linked to health problems in contaminated building occupants and should be treated prudently and in accordance with recommended abatement guidelines.

Syncephalastrum is commonly found in soil samples.

Trichoderma harzianum Often found on wet wood or on insulation supporting high water activity. It may produce trichothecene mycotoxins and a strong pungent odor.

Trichoderma viride Encountered on chronically wetted structural wood elements in building environments. It can also be encountered in moist dust accumulations in ventilation ducts, wet basement soil and wet insulation. It produces a variety of toxic metabolites including trichothecenes.

Ulocladium species The fungus is a high water activity species. It is saprophytic and recovered from surfaces of plants, paper, etc. It is not known to be toxigenic.

Ustilago Corn smut, a plant disease rarely a human pathogen.

Verticillium widely distributed filamentous fungus that inhabits decaying vegetation and soil. Some *verticillium* species may be a pathogenic to arthropods, plants and other fungi. It is commonly considered as a contaminant. *Verticillium* may very rarely cause human disease.

Yeast Especially after rainfall, *Candida* is very common in outdoor air. Yeasts occur in indoor air from damp indoor sources, such as carpet and heating, ventilation and air conditioning (HVAC) units. In settled dusts, yeasts, mainly *Candida*, are exceedingly common. It is conjectured that they survive for long periods of time.