

# APPENDIX 9:

Government of the District of Columbia

Bureau of Environmental Quality  
Air Quality Division



June 5, 2003

[REDACTED]  
Office of Risk Management  
441 4<sup>th</sup> Street, NW suite 1010 S  
Washington, DC 20001

Dear Ms. [REDACTED]

On Tuesday, May 27, 2003 I received a call from [REDACTED] Asst. Deputy Director for the Department of Health, Environmental Health Administration. His called was to inform me about complaints regarding elevated levels of formaldehyde and possibly other volatile organic compounds (VOC's) and mold at the District Morgue. On Tuesday, May 27, 2003, the same day, I conducted an investigation at the District's Morgue.

Air samples confirmed elevated levels of VOC's in the Histology lab using a photo-ionizing detector (PID), an instrument used to measure VOC's. The PID indicated elevated levels ranging from 5ppm - 24.7ppm throughout the lab. [REDACTED] Toxicologist mentioned that formaldehyde, Xylene and Alcohol is used in this room. According to the National Institute for Occupational Safety and health (NIOSH) the acceptable levels for formaldehyde are 0.016ppm - 0.1ppm [15min]. The IDLH (immediately dangerous to life and Health) for formaldehyde is 20ppm. *(The PID was calibrated one hour before usage using a charcoal filter, isobutylene gas and fresh air).* The Heating, Ventilation & Air Conditioning (HVAC) system should be able to exhaust air/contaminants from this room and supply it with fresh air. If this is not occurring, then the HVAC system requires balancing and/or additional maintenance.

According to the Environmental Health Administration (EPA), formaldehyde is a colorless, pungent-smelling gas that can cause watery eyes, burning sensations in the eyes and throat, nausea, and difficulty in breathing in some humans exposed at elevated levels (above 0.1 parts per million). High concentrations of formaldehyde may trigger attacks in people with asthma. There is evidence that some people can develop a sensitivity to formaldehyde. It has also been shown to cause cancer in animals and may cause cancer in humans. Health effects include eye, nose, and throat irritation; wheezing and coughing; fatigue; skin rash; severe allergic reactions. May cause cancer.

I was also told about ceiling leaks in the Histology lab, that ceiling tiles have fallen due to roof leaks and tat mold has been seen on the opposite sides of ceiling tiles and were not replaced. (I will explain the health effects of mold exposure later in this report.)

I was also told about mold contamination in the basement and was directed to a basement storage room where mold was seen on a small section of wall. The temperature in the storage room was 71.5°F with a relative humidity (RH) of 44.8%. On the opposite side of the wall with mold growth is "Cold Room #3" that had a temperature of 39.2°F. The variance of temperatures between the walls may have produced some condensation and coupled with the level of humidity may explain the mold growth on the wall. I would recommend removing the section of wall with mold and replacing it with new drywall. You may also consider damp-proofing the new drywall with a tar or bituminous paint or coating.

There have been reports linking health effects in office workers to offices contaminated with mold surfaces and in residents of homes contaminated with fungal growth (Husman T. Health Effects of Indoor air Microorganisms. *Scand J Work Environ Health* 1998; 22:5-13). Inhalation of fungal spores, fragments (parts) or metabolites (e.g., mycotoxins and volatile organic compounds) from a wide variety of fungi may lead to or exacerbate immunologic (allergic) reactions, cause toxic effects or cause infections (Montana E, Etzel R, Allan T, Dearborn D. Environmental Risk Factor Associated with Pediatric Idiopathic Pulmonary Hemorrhage and Hemosiderosis in a Cleveland Community. *Pediatrics* 1997; 99(1); Etzel R, Montana E, Sorenson WG, Kullman G, Allan T, Dearborn D. Acute Pulmonary Hemorrhage in Infants Associated with Exposure to *Stachybotrys art* and Other Fungl. *Ach Pediatric Adolesc Med* 1998; 152: 757-62.)

In all situations, the underlying cause of water accumulation must be rectified or fungal growth will recur. Any initial water infiltration should be stopped and cleaned immediately. An immediate response (within 24 to 48 hours) and thorough clean up, drying, and/or removal of water damaged materials will prevent or limit mold growth. If the source of water is elevated humidity, relative humidity should be maintained at levels below 60% to inhibit mold growth (American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. Thermal Environmental Conditions for Human Occupancy - ASHRAE Standard (ANSI/ASHRAE 55-1992). Atlanta, Georgia, 1992).

If this office can assist you further, please feel free to call me on (202) 535-2999.

Sincerely,

  
Environmental Specialist