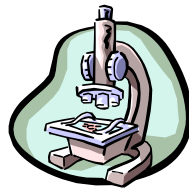


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**Report for Orleans Elementary School
38016 Ca-96
Orleans, Ca. 95556**



**Mold Report
December 16, 2016**

This report is based on a request by the CRM group for Asbestos Science Technologies, Inc. to perform services relevant to water incursion problems and subsequent mold and fungal contamination that have occurred at the site known as Orleans Elementary School.

This report takes into account mold and fungal contamination in all the areas which were sampled. It does not address areas which were not sampled. This report shall not cover areas of infestation by insects, i.e. termites and/or vermin, etc. It also does not cover any bacterial or viral influences.

This report shall address the anticipated and visually acknowledged source of the water incursion and areas which have been addressed by sampling methodologies.

Plans for remediation and action by the district in accordance with standard health and safety issues shall be addressed as part of this report and protocol.

The extent of actual mold is indicated as part of this report and protocol. Destructive physical sampling has been minimally performed and limited air, tape and physical samples were taken in areas where further damage would not occur as a result of said sampling. Sampling was performed in order to determine extent of damage, location of water incursions as well as toxigenic mold and fungal contamination problems. Health and safety are the primary concerns for the buildings occupants.

This protocol shall address the specific measures which shall be taken to address the health and safety risks of all persons that may be occupying the aforementioned school building. There may be significant health risks associated with inhalation of harmful spores.

This project shall be subject to OSHA guidelines involving hazard communication. Reference for communication shall be 29 CFR 1910.1200. Respiratory protection shall be based on 29 CFR 1910.134.

Jon Warren - Industrial Hygienist and bio-hazard consultant, performed an inspection of Orleans Elem. School. The school areas inspected were all classrooms and associated bathrooms.

After the visual inspection was conducted, surface tape lift samples and physical samples for mold were collected for identification and quantification.

At the time of the initial investigation visual observations indicate visible mold/fungal contamination in the classroom wing. Visible signs of water damaged areas and mold were observed in all the listed areas. The source of water incursion problem appears to have emanated from the roof areas. The ceiling and walls of the above areas are high in moisture content as of the time of the inspection. This is causing the failure of the roof and wall areas which no longer adequately protect the school from water incursion issues. This has also become a health and safety issue for the district as students and faculty are being exposed to airborne mold spores which are toxigenic and above normal levels for allergenic mold spores. Moisture levels based on random sampling are between 11% and 57%.

Microscopic examination of samples collected indicates an elevated level of Drechslera/Bipolaris which are known to be toxigenic and can produce mycotoxins. There are also high amounts of basidiospores, myxomycetes/periconia/smuts in room 4. Ulocladium in black mold form was found in room 5 which causes hay fever and asthma problems at this stage. More invasive sampling has confirmed the results of this initial sampling. The area where the black mold physical sample was taken in room 5 on the ceiling was wet at the time of sampling. This is important as this spore grows under very wet conditions. The black mold and toxigenic mold problems at Orleans elementary occurred throughout the classroom wing. Therefore, indoor contamination is present. Moisture readings varied between 11% on ceiling tile to 57% on the ceiling in classroom 5. The classroom wing areas shall not be entered except by a remediation contractor with adequate respiratory protection. (Note, the air quality is subject to change with the environment.) Continual moisture, disturbance, and/or activity associated with mold-infested materials can amplify indoor airborne mold spore concentrations, i.e. student movement and activity throughout the building. Based on the above, immediate health and safety measures are being requested to be put into place involving remediation. These spores as indicated above are considered toxigenic, produce mycotoxins and typically act as opportunistic pulmonary pathogens. The mycotoxins produced by these molds tend to be immunosuppressive. These findings shall be communicated to all individuals within the said structure and more specifically to all remediation workers. Anytime that mycotoxins are found on the interior of a building as a result of

water incursion issues, health and safety practices shall be put into place. Immediate health and safety measures are being requested to be put into place involving remediation and including immediate evacuation and closure of the affected areas.

As a result of the history of water intrusions affecting the interior areas, the source of mold indoors and out shall be addressed. The sample results are to a point that would justify taking action to not occupy the aforementioned building areas in their entirety. The entire roof shall be removed, including all plywood and any affected wood beams below. All drywall, wall tile, ceiling tile and/or plaster shall also be removed. All cellulose ceiling tiles, drywall/joint compound and insulation shall also be removed through remediation. All areas shall be placed under full containment guidelines.

Individuals that have low or compromised immune systems, the elderly and children especially are allergic to said molds and may show some indication of sensitivity even to low levels of airborne mold spores.) There is no known safe level of mycotoxins which cause health related respiratory ailments.

MYCOLOGICAL SITE REMEDIATION PLAN

Immediate remediation of the structure listed above is necessary. This judgment is based on laboratory confirmation as well as physical confirmation of clinically significant fungal surface contamination found on surfaces where water stains and visible mold/fungal contamination are present. Furthermore, the roofing, the plywood, the sheetrock ceiling, insulation, ceiling tiles and wall materials throughout the structure where water intrusions occurred shall be treated as mold infested based on the sample results and visual observations. The following recommendations for remediation shall be followed. An experienced competent mold abatement contractor shall perform all mold remediation activities. Air monitoring for mold, asbestos and lead shall occur from the start of the project until the completion. EPA, CARB and CAL/OSHA requirements shall be followed for the asbestos portion of this project. Department of Health Services guidelines as well as CAL/OSHA guidelines shall be followed for all lead removal. Asbestos and lead specifications have been written to address the asbestos and lead issues.

Health and Safety Procedures

1. Negative air containment shall be set for the building. Charcoal filtration shall be added to the (HEPA) high efficiency particulate air machines to filter spores. Maintain strict biohazard workers protection procedures (protective clothing, respirators with NIOSH approved HEPA for particulate filtering and with Carbon/Charcoal filters for spore and CL/Chlorine vapor filtering, safety goggles and gloves). All roof, ceiling and wall areas shall be removed in the buildings. Walls that contain drywall/joint compound and/or plaster shall also be followed and observed through standard cut lines to determine mold/fungal contamination that have entered wall cavities.
2. Based on the sample results, all exposed hard contents in the areas tested shall be wiped down before and after the abatement process. Any and all hard contents shall be covered prior to abatement. Any item that could be damaged during the remediation process shall be removed.
3. Cut and remove all mold infested ceiling tile, drywall joint compound above and/or plaster, insulation, plywood, roofing located throughout the Orleans Elem. School classroom wing. Remove all ceiling and wall insulation to access the mold infested structural timbers/ceiling and wall joists behind. Remove all roofing and roof plywood. Inspect wood members for structural integrity and mold/fungal growth. When found, HEPA vacuum the exposed wood members below the plywood and in the wall surfaces, wipe down and sand if necessary. Cut and remove any wood sections that have lost structural integrity from water damage. This action is recommended throughout the buildings above the ceiling and down the walls where the water incursions have occurred. Do not remove any timbers that may cause for collapse of the building. Prior to removing any wood members, request an inspection from the district architect/engineer as to structural requirements and effect on said building. All HVAC systems shall also be removed as part of this project.
4. All work shall be done inside the containment (negative air enclosure). Negative pressure shall be at a minimum negative 0.02 inches of water. After removing the wall and ceiling insulation. Inspect the cavities for mold on wood members. If visible mold is found, HEPA vacuum, brush, and/or sand visible mold off the wood members located inside the wall cavity. Soda blasting or its' equivalent will also be required at the discretion of the onsite hygienist.

5. All water damaged and mold contaminated building materials shall be removed and discarded. No materials shall be replaced until the roof has been perfectly fixed and/or replaced. Concrete, masonry, structural steel and wood members may be cleaned and remain in place. Removal will continue until no mold growth is visible. Demolition of the contaminated construction materials will cause mold spores to be released in high concentrations into the air. Consequently, demolition must be performed only within an area contained by poly sheeting, with the constant use of negative air HEPA filtration machines to reduce dispersal of the mold spores. Removal of contaminated materials from containment shall be performed such that contamination is prevented to surrounding building rooms and contents. Such materials shall be bagged in six (6) mil poly, made airtight by double sealing, sufficiently disinfected, air dried and HEPA vacuumed before removal from containment.

6. Following removal of contaminated materials, all wall and ceiling cavities, studs, and base plates (as much as possible) within the contained area shall be disinfected. Disinfections are by liberal application of a 1:5 (or stronger) solution of sodium hypochlorite, using a stiff bristle nylon brush with a scrubbing action, then wiped dry. Any Cabinetry should be wiped with a 1:10 dilution of sodium hypochlorite, and then air-dried.

7. After cleaning the ceiling & wall cavities, HEPA vacuum and then wipe down all remaining exposed walls, floors and ceilings inside the containment area by use of fresh clean rags and a virgin cleaning agent and/or disinfectant (virgin meaning: spray only, no rag to bucket). Repeating this method will minimize residual airborne mold spore settlement that occurs during mold abatement activities.

8. Following abatement, clearance air samples shall be collected in the containment area, outside containment, and compared to baseline samples taken outside of the structure.

9. If testing indicates spore contamination outside of the water damaged area, cleaning by HEPA vacuuming of all exposed contents shall be performed. Those items stored in closed containers (i.e. boxes, cabinets, and drawers) which have not been opened subsequent to the water damage episode, and which were never exposed to water or associated high humidity will not require cleaning. Such HEPA vacuuming will be performed after the completion of mold abatement, including disinfections. Goods and materials which have hard surfaces and which have not sustained water or mold damage, and all internal structural surfaces inside containment should also be disinfected and HEPA vacuumed prior to removal of containment. All water and mold damaged items shall be replaced with virgin equivalent items.

10. Forced airflows through HVAC systems shall not be permitted into or out of contaminated areas (HVAC systems shall be shut down and blocked off with poly in all containments or contaminated areas). Replace filters on HVAC systems if airborne spores have been released while the systems were operating.

11. Negative air, exhausting to the buildings' exterior and filtered through HEPA filters shall continue throughout the entire remediation process until clearance samples indicate that the ambient spore levels have been achieved. Further recommendations and/or final project clearance will depend on the results of these tests.

12. Continued moisture in a structure may cause additional mold growth or the recurrence of mold infestation after remediation has been completed.

13. All wood members which are exposed after remediation procedures shall be treated with an approved mold inhibitor and sealed.

Abatement workers shall wear respirators with HEPA and chlorine gas filtration, disposable protective gloves (latex or equivalent), foot coverings and clothing when involved with and demolition of disinfecting activities inside containment.

Before leaving containment, abatement personnel shall remove gross contamination from the outside of respirators and protective clothing by vacuuming with a HEPA vacuum. All disposable clothing shall be removed inside the containment area and treated as contaminated waste.

Jon N. Warren

This report has been prepared by Jon N. Warren