
BioMax Environmental

Environmental Consulting and Industrial Hygiene Services

December 19th, 2008

Mr. Doug Button
Deputy Director
Real Estate Services Division
707 Third Street - 8th Floor
West Sacramento, CA 95605

**Revised Investigative Containment and Clearance Procedures -
La Croix Davis Destructive Inspection Activities - 11th Floor Interior Ceiling Area
Department of General Services Board of Equalization Building
450 N. Street
Sacramento, California**

Dear Mr. Button,

BioMax Environmental, LLC (BioMax) is pleased to provide the Department of General Services (DGS) with this letter summary report detailing BioMax's recommended procedures pertaining to the establishment and maintenance of localized containment systems during the anticipated ceiling inspection and destructive testing activities performed by DGS's selected environmental contractor, LaCroix Davis (LCD). Such activities are proposed within the currently unoccupied 11th Floor of the BOE building located at 450 N Street (subject building) Sacramento, California. However, it is also specifically recognized (in the development of these procedures) that the building tenants shall also maintain access to the elevator corridor areas on this floor as these locations are currently maintained and used as a tenant "cross over" route from the high-rise elevator bank to the lower rise elevator bank. Also recognized in these procedures is that the elevator lobby area of the 11th floor is currently used as a designated rally point for fire safety/emergency plan purposes and that floor wide Heating Ventilation and Air conditioning (HVAC) systems will be maintained operational for the duration of the interior containment and investigative activities. Hence, the investigative protocols developed in this procedural document have been prepared in accordance with these building and tenant specific requirements.

BioMax understands that such activities have been requested in an ongoing effort to investigate the presence and sources of potential mold and moisture damages located within interior ceiling cavity plenum and localized wall cavity spaces located throughout the 11th floor of the subject building and to establish standard procedural requirements during the performance of such destructive inspection and testing, as deemed necessary. Hence, the primary intended goal of these task-specific procedures is to establish standard procedures, methods, and controls

pertaining to such inspection and testing activities performed by LCD within these designated non-occupied floor areas of the subject building under the containment barriers noted in this procedure.

Hence, these recommended procedures have been developed by Mr. Michael A. Polkabila, CIH, REA, of BioMax at DGS's direction in accordance and consistent with prudent protective controls and material removal guideline procedures currently established within the subject building. Mr. Polkabila has been certified in the Comprehensive Practice of Industrial Hygiene by the American Board of Industrial Hygiene and holds the right to the designation "Certified Industrial Hygienist" (CIH) under certification number CP 7104. Mr. Polkabila is also certified by the California Environmental Protection Agency (Cal/EPA) as a Class I Registered Environmental Assessor (REA) under Cal/EPA certification number 05011. Hence, in response to DGS's specific request, BioMax proposes the following supplemental procedural recommendations for appropriate consideration and implementation as needed.

1. **Mitigation Contractor for Containment Erection and Ceiling Cavity Access:** A mitigation contractor shall be selected and contracted to perform the activities specified in these procedures. Such activities shall include containment system establishment/set up, and maintenance activities performed for the duration or ceiling cavity removal/access and repair as required by LCD as part of their designated scope of work as described below. The selected mitigation contractor must be specifically trained in the field of current practices associated with microbial abatement techniques and containment methods as well as maintain demonstrated proficiency in the establishment and use of appropriate barriers, personal protective equipment, abatement techniques and methods as necessary in the performance of their designated scope of work.
2. **Identification of Locations for Wall Cavity Assessment:** In cooperation with the mitigation contractor, LCD has identified areas within the 11th floor where ceiling cavity access and destructive inspection is desired. A site diagram has been attached to these procedures which delineate the location and approximate size of each of the locations requested. Based on this diagram, it is currently anticipated that a total of ten containments shall be established as part of LCD's proposed scope of work. A detailed physical record of all ceiling and wall cavity inspection locations shall be documented and maintained by LCD and the mitigation contractor during the performance of this scope of work. Such records shall be made available for review by DGS, BOE and their designated representatives upon request.
3. **Tenant Notification and Scheduling:** At the request of BOE, all work scheduling for proposed site activities shall be provided to BOE representatives prior to any physical floor activity so as to allow ample time for BOE review and comment regarding such procedures. As part of such review, any specific requirements and/or supplemental requested controls shall be addressed through consultation with BioMax's Project Certified Industrial Hygienist (Project CIH) as well as BOE's on-site consultant Hygientech International (HTI), as necessary. It is currently anticipated that all forthcoming intrusive ceiling and wall cavity

inspection and testing activities performed by LCD shall be performed during normal and/or extended working hours due to the currently unoccupied status and limited interior access of the noted 11th floor.

4. **Establishment of Localized Containment Barriers:** Isolation of the selected wall and ceiling cavity spaces shall be achieved through the establishment of protective containment barrier systems erected prior to and during all physical ceiling/wall material removal operations requested by LCD. BioMax has been informed that such LCD inspection/sampling activities shall include the immediate wall repair and clean-up measures performed by the mitigation contractor at the time shortly following all inspection and sampling activities as performed under this scope of work. To this end, localized negative pressure containment barrier systems shall be established and maintained from floor to ceiling at each of the locations designated by LCD prior to and for the duration of these activities. Negative air pressure shall be maintained within each critical containment area (for the duration of this scope of work) utilizing High Efficiency Particulate Aerosol (HEPA) filtered "negative air machine" equipment vented to the outside adjacent interior areas. An adequate supply of filtered intake air shall also be established to allow an adequate supply of "clean" HEPA filtered make-up air into the critical containment wherever practicable. As a performance criteria goal, negative air pressure will be established and maintained within the established containment system areas at a performance goal level of -0.02 inches of water pressure on a 24 hour basis for the duration of mitigative activities, whenever possible and feasible. At BOE's request, the common procedural practice to place clear translucent plastic observation windows on the critical containment barrier system within direct sight of the affected work areas shall not be performed or established for the purposes of facilitating non-entry inspection during the performance of prescribed destructive inspection and repair activities. Containment systems shall consist of plastic or otherwise impermeable materials with zippered entry chambers erected to allow controlled access and egress from such contained areas. HEPA filtered vacuum equipment capable of the effective removal of particulate contaminants from tools and personal protective equipment shall be placed within the zippered entry/egress chamber attached to each designated working and inspection area.
5. **Posting and Containment Pressure Monitoring -** During the performance the forthcoming destructive inspection, testing, and repair activities, appropriate signage and warnings must be posted within the areas leading to all controlled areas and particularly on the exterior of containment entrances to record entry access and to preclude uninformed access from unauthorized personnel. For these purposes, a sign-in log shall also be maintained at the designated entrances of each containment area as well as located immediately within the primary floor entry points utilized by all inspection and repair personnel who enter the controlled areas. Data logging monitoring equipment employed to record pressure differentials on a 24-hour basis shall be used for the duration of this project where functional critical barriers are established and in use. Such pressure monitoring devices shall utilize paper strip chart records so as to allow routine and regular inspection of pressure readings by the Project CIH and DGS project management personnel as necessary. The mitigation contractor shall maintain physical records and will provide a weekly written summary of continuous monitoring levels for the duration of the project and upon request.

6. **Modifications to Barrier Systems:** Any smoke detectors and/or fire suppression systems present within containment systems shall neither be covered nor rendered inoperable as part of these operations unless specifically authorized under the direction and supervision of DGS building maintenance personnel. BioMax is prepared to provide the selected mitigation contractor with additional and ongoing detail pertaining to the establishment maintenance, and specific locations of critical containments and barrier systems upon request, as necessary. Once final containment parameters have been delineated, the mitigation contractor shall maintain an "as built" record (both digitally and on site map records) of specific containment locations and materials for further review and reference.
7. **Establishment of Air Scrubbing and Negative Air Machines -** Supplementing the existing negative air machines (designed to establish and maintain negative air pressure within each of the containment systems) the supplemental use of HEPA filtered air scrubbing machines shall also be achieved within critical areas of adjacent work spaces located outside the containment systems during all forthcoming destructive inspection, and repair activities. At the direction of the Project CIH, such air scrubbing machines shall be established and oriented within adjacent working spaces and relocated to additional active work areas as necessary. Supplemental air scrubbing machines shall be placed within areas outside of the working and/or containment areas as an additional precautionary measure as necessary at the direction of the Project CIH.
8. **Personal Protective Equipment (PPE):** As part of the investigative work performed by LCE, personal protective equipment utilized by containment entrants during the performance of interior wallboard material removal, inspection, sampling, repair, cleaning activities, and verification shall include the use of hooded Tyvek coveralls, nitrile gloves (1-3 mil.), and NIOSH approved HEPA filtered (P100) full or half face air purifying respiratory protection devices at a minimum. PPE requirements associated with area containment set up and equipment handling (prior to wall removal activities within containment systems) may utilize standard construction regimen including standard material coveralls and ANSI approved eye protection at minimum. Voluntary use of dust mask-type respiratory protection may also be utilized during barrier set-up and clearance activities performed by workers, inspectors and/or subcontractors during non wall opening activities (including inspection and site walks). Please note that such modified PPE regimen is NOT applicable during the destructive inspection, sampling, and repair procedures noted previously above.
9. **Fall Protective Devices:** It is not currently anticipated that entry within wall and/or ceiling cavities will be performed as part of this scope of work requiring the need for fall protective devices. In the event that such protective equipment are warranted, however, LCD shall assure that such activities are performed in accordance with applicable worker protection regulations and fall protection guidelines in accordance with federal, state and local requirements. Such worker protection requirements include (but are not limited to) those requirements provided by the California Department of Occupational Safety and Health (otherwise known as Cal/OSHA).

- 10. Wall and Ceiling Cavity Penetration and Inspection:** At the direction of LCD, the mitigation contractor shall perform localized wall and/or ceiling material removal at locations and areas identified by LCD. It is currently anticipated that the physical removal of wall material segments shall employ the use of skill saw equipment wherein a small (e.g. 1-2 foot square) section of wallboard materials are removed for physical inspection of condition and identification of underlayment materials and structural design. At the contractor's option, such removal activities may be modified and may include the use of supplemental HEPA filtered vacuum equipment and/or application of a low volume misting agent prior to physical removal of wall material structures in an effort to minimize the generation and release of dust and friable particulate debris. All physical removal activities and procedural methods shall be performed by the mitigation contractor under the direction and supervision of LCD with appropriate review and comment by the Project CIH. It is anticipated that physical sampling of representative materials will likely also be performed by LCD during these activities.
- 11. Gross Material Clean-Up:** Following all physical wall removal, inspection, and sampling activities noted above, a detailed material clean up activity shall be performed by the mitigation contractor utilizing methods, procedures, and equipment applicable to the material surfaces and debris in question. Such procedures and methods may include material specific sweeping, HEPA vacuuming, and/or wet-wiping methods as applicable in the removal of all gross visible debris and materials associated with the wall and ceiling material removal and inspection activities.
- 12. Wall Penetration Repair:** As applicable and in accordance with any supplemental requirements mandated by the local Fire Marshall authority, all wall penetrations will be repaired shortly following the performance of the inspection and/or sampling activities noted above. Hence, following the performance of LCD's inspection and sampling activities, the mitigation contractor shall perform such repairs of the wall board and ceiling materials as required and specified. A specific material and procedural detail pertaining to such required repairs may be provided by the mitigation contractor and/or DGS project management personnel upon request.
- 13. Final Clean-Up:** Following the performance of gross material clean up and sheetrock repair methods, all interior containment barrier surfaces shall be detail cleaned utilizing a combination of HEPA vacuuming and wet-wiping methods as applicable to the surface and materials in question. As general guidance criteria, HEPA filtered air scrubbing shall be maintained operational for a minimum of 24 continuous hours prior to any further containment entry access, inspection, and/or clearance assessment activities. Such required air scrubbing procedures may be modified based on DGS and/or BOE scheduling requirements as necessary.
- 14. Post Inspection and Repair Clearance Assessment:** Upon completion, BioMax's Project CIH shall perform a visual inspection to verify the continued integrity of the containment systems and to verify that that all prescribed inspection, repair, and clean-up efforts have been appropriately achieved. Once physically verified, the Project CIH shall collect a series of microbial "clearance" air samples to verify that all containment areas have been

appropriately decontaminated to acceptable background airborne levels and that the affected areas within and surrounding each of the containment areas are verified as "cleared" for forthcoming final reconstructive activities. Specific clearance criteria parameters utilized during this phase of assessment have been previously developed by the Project CIH and approved by DGS and BOE as referenced in BioMax's procedures entitled Post Mitigation Clearance Assessment Protocols, dated February 15th, 2008. As part of this post mitigation "clearance" verification process, the provision of appropriate access for parallel inspection and review of sampling data and current site conditions shall be offered to BOE and their consultants. It is currently anticipated that a reasonable time period shall be afforded to BOE and their industrial hygiene consultants for their appropriate inspection, review of analytical findings, and performance of any supplemental sampling activities (at BOE's option) prior to initiation of reconstruction activities. Additional "punch-list" action items may be provided to the contractor following the performance of this site clearance inspection prior to receipt of analytical results, as deemed necessary.

15. **Post Clearance Access:** All BOE staff, DGS personnel, inspectors, and contractors shall only be provided further access into containment areas following the receipt of analytical findings wherein acceptable conditions have been reviewed and verified by the Project CIH. Emergency access into any containment area prior to such verification shall only be permitted under the direct supervision and attendance of JLS and/or BioMax representatives and only with appropriately trained personnel with proper PPE utilization.
16. **Additional Activities:** Reasonable additional assessment and mitigative measures may also be required upon the identification of new or previously undiscovered materials and/or information related to moisture/microbial impacts, as necessary. Any reoccurrence of moisture intrusion indicators and/or microbial contamination following reconstruction should certainly be reviewed and addressed through further professional consultation, as necessary. BioMax would be happy to provide additional microbial consultative services pertaining to the further assessment and mitigation of such structures upon request.

BioMax believes that the recommended procedures outlined above are consistent with the mitigative control procedures and methods currently established within the subject building. If you have any additional questions, comments, or require further assistance, please do not hesitate to contact our offices directly at (510) 724-3100.

Sincerely,



Michael A. Polkabila, CIH, REA
Vice President, Principal



LIMITATIONS

Please note that the professional opinions presented in this review are intended for the sole use of DGS and their designated beneficiaries. No other party should rely on the information contained herein without the prior written consent of BioMax Environmental and DGS. The professional recommendations and opinions provided herein are based on BioMax's review and understanding of current site information and observed site conditions present within the areas inspected at the time these services were performed. Professional recommendations provided as part of this limited scope of work are intended for client consideration only and are not intended as a professional or regulatory mandate. Implementation of any of the above measures or recommendations does not, in any way, warrant the day-to-day health and/or safety of building occupants, residents, site workers, nor regulatory or building code compliance status during normal and changing environmental conditions. As microbial contamination, by nature, may change over time due to additional moisture intrusion, favorable growth conditions, and changing environments, the findings of this report are subject to change in the event that such conditions and/or environments arise. Also, the professional opinions expressed here are subject to revision in the event that new or previously undiscovered information is obtained or uncovered.

It is expressly noted that all risk management and safety related decisions are criteria dependent and situation specific requiring extensive knowledge and value assessments to be properly determined and implemented by competent professionals. Hence, the recommendations provided and contained in this and any other applicable report communication is intended for consideration purposes only. It is not intended, nor should it be construed as providing legal advice or warranting any level of safety or regulatory compliance. The sole purpose of such information is to assist with the identification, evaluation and control of observed or measured levels of contamination resultant from physical, chemical, and/or biological hazards. Any action taken based on this information, including but not limited to opinions, suggestions and recommendations, whether implied or expressed, is the sole responsibility of the individual taking the action.

These services were performed by BioMax in accordance with generally accepted professional industrial hygiene principals, practices, and standards of care. Under the existing Industrial Hygiene Definition and Registration Act, all reports, opinions or official documents prepared by a Certified Industrial Hygienist (CIH) constitutes an expression of professional opinion regarding those facts or findings which are subject of a certification and does not constitute a warranty or guarantee, either expressed or implied.

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Proposed Supplemental
Containment Locations:

