POST-REMEDIATION MOLD ASSESSMENT AND CLEARANCE REPORT

BB Owen Elementary School Library 5640 Squires The Colony, Texas

> May 20, 2013 Project No. 0113H113

> > Prepared for:

Lewisville Independent School District 340 Lake Haven Lewisville, Texas 75057 Attention: Mr. Paul Siddall

Prepared by:



2351 W. Northwest Hwy., Suite 3321 Dallas, Texas 75220 Ph: (214) 350-5469

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May 20, 2013

Mr. Paul Siddall Lewisville Independent School District 340 Lake Haven Lewisville, Texas 75057 Attention: Mr. Paul Siddall

Re: Post-Remediation Assessment

and Clearance Report

BB Owen Elementary School

Library 5640 Squires

The Colony, Texas

SWG Project No. 0113H113A

Southwest Geoscience (SWG) is pleased to submit its final Post-Remediation Assessment and Clearance Report for recent mold remediation activities at the Site. SWG was retained to undertake Post-Remediation Assessment and Clearance services (hereinafter the "Services") for the Remediation Areas at the site in accordance with SWG's Proposal No. P0113H1187 dated May 9, 2013. The Services were authorized by Mr. Paul Siddall of the Lewisville Independent School District. Results of SWG's Post-Remediation Assessment and Clearance sampling indicate the Remediation Contractor successfully completed mold remediation activities in the Remediation Areas at the Site and that the Remediation Areas can now be renovated.

Supporting documentation for this report are included in the report appendices and include: a site diagram, photographs, analytical results, work protocol, a third party moisture intrusion statement, contractor's work plan and a copy of SWG's portion of the Texas Department of Insurance MDR-1 form.

SWG appreciates opportunity to provide Post-Remediation Assessment and Clearance Services. If you should have any questions, please contact me at (214) 350-5469.

Sincerely,
Southwest Geoscience

Darren G. Bowden Corporate Director Industrial Hygiene Services Mold Assessor License No: MAC0321 License Expiration Date: 02/15/2014

Attachment



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1.0 SCOPE OF SERVICES

Southwest Geoscience ("SWG") was engaged by Lewisville Independent School District (CLIENT) to conduct a post-remediation mold assessment and clearance sampling for the Remediation Area at BB Owen Elementary School, Library, located at 5640 Squires in The Colony, Texas ("Site"). SWG's Post-Remediation Assessment and Clearance Services (hereinafter the "Services") were conducted for the Remediation Area of the site in accordance with the scope of work set forth in SWG's Proposal P0113H113A dated May 9, 2013.

SWG's services for this project included:

- Visual Reconnaissance of the CLIENT identified Mold Remediation Areas (as defined in Section 3.2 below) to verify that the Remediation Area is free from all visible mold and wood rot.
- Visual reconnaissance of the Remediation Areas and review of the project Mold Remediation Protocol and Remediation Work Plan for the project to verify that the mold remediation work was completed in compliance with the Remediation Protocol and Work Plan.
- Conduct verification sampling in Remediation Areas and compare results to clearance criteria in project Mold Remediation Protocol.
- Determine, based upon available information, whether the moisture source identified as the underlying cause of the mold in the Remediation Areas was properly remediated such that it is reasonably certain that the mold will not return from that remediated cause.
- If clearance criteria for the Remediation Area(s) have been achieved, prepare the Mold Assessor's portion of the Mold Remediation Certificate (on Texas Department of Insurance Form MDR-1).

2.0 STANDARD OF CARE, RELIANCE AND LIMITATIONS

2.1 Standard of Care

SWG performed the Services in accordance with generally accepted practices of the profession undertaken in similar services at the same time and in the same geographical area. No other warranties, express or implied, apply to the Services hereunder or this report.

2.2 Reliance

The Services were conducted and this report prepared for the benefit and exclusive use of the CLIENT and solely for its use and reliance in assessing whether mold in the project Remediation Areas of the Site had been remediated within clearance criteria set forth in the Mold Remediation Protocol. The CLIENT was the only party to which SWG explained the risks and limitations of the Services and was solely involved in shaping the scope of services. Accordingly, reliance on this report by any other party may involve assumptions leading to an

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unintended interpretation of findings and opinions. With the consent of the CLIENT, SWG may offer reliance to third parties or contract with other parties to develop findings and opinions related to such party's unique risk management concerns. Notwithstanding the foregoing, reliance by any and all third parties upon the Services or this report shall be limited in the aggregate to the fair market value of the Services.

2.3 *Definitions*

"Mold" defined. Mold is a general term used to describe various types of naturally occurring biological organisms occurring worldwide. For purposes of this report (and regulations), the term "mold" is broadly defined to include any living or dead fungi or related products or parts, including spores, hyphae, and mycotoxins.

"Remediation Area" means that portion of the Site where mold remediation activities have been completed and as more particularly defined in Section 3.2 of this report.

2.4 Services and Report Limitations

Time sensitive. One must keep in mind that mold assessments, including post-remediation mold assessment and clearance sampling, are essentially a "snap-shot in time," and the results are only relevant as of the time of site reconnaissance and sampling. Because mold, when biologically active, is a living organism, its presence is influenced and controlled by environmental conditions. Mold assessments, therefore, are "time sensitive" in that the presence and concentration of mold and similar organisms in building structures or in the air is directly influenced by environmental conditions (such as humidity, moisture, nutrients and substrates), whether natural or caused by man, which conditions may vary significantly over relatively short periods of time.

Methodologies. Currently, mold assessment methodologies and protocols in Texas are governed by persuasive guidelines (rather than promulgated federal/state or local regulations). Presently, there is no data that supports a threshold limit or dose-response relationship for exposure to mold aeroallergens, individual pathogens, opportunistic pathogens and/or mycotoxins. The Occupational Safety and Health Administration (OSHA), the National Institute of Occupational Safety and Health (NIOSH) and other non-governmental associations, have not yet established permissible exposure limits (PELs), recommended exposure limits (RELs), or other limit values for aeroallergens. Because no limit values presently exist, SWG will not and cannot represent that the site contains no harmful microbes, mold, fungi, or their metabolites, or other latent conditions beyond those identified by the limited scope of this mold assessment.

Moisture Intrusion Limitation. SWG is not a moisture intrusion, HVAC, plumbing, roofing or building envelope contractor or specialist ("Building Trades Specialist"). In performing the Services, SWG has relied upon statements, certifications and/or findings made by the CLIENT, Site owner or Building Trades Specialists that the moisture source which is the underlying cause of mold in the

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Remediation Areas has been identified and remediated such that it is reasonably certain that the mold will not return from that remediated cause.

Findings Limited. SWG's findings from the Services are limited due to their "time-sensitive" nature and because they rely in part upon information prepared or provided by the CLIENT, the Site owner or third parties. SWG cannot warrant the accuracy of any services, investigations, information, data, reports, findings or conclusions prepared, made or performed by any other party in connection with the Mold Remediation Areas or other activities at the Site. SWG assumes no responsibility or liability for errors in information or data provided by or through the CLIENT, the Site owner or any third party sources. SWG's services are not to be construed as legal or medical interpretation or advice.

Mold Remediation Certificate. For mold remediation projects (above certain size thresholds), applicable Texas law (i.e., Texas Occupation Code Section 1958.54 and T.A.C. Section 295.397 (the Texas Mold Assessment and Remediation Rules), requires that a "Certificate of Mold Remediation" (hereinafter, "Mold Remediation Certificate") be issued by the Mold Remediation Contractor upon successful completion of the project. This certificate must be provided to property owners no later than the 10th day after the date on which the mold remediation is completed at a property. The Mold Remediation Certificate issued by the Mold Remediation Contractor must include a certification by the Mold Assessor that the mold remediation project has been successfully completed in accordance with the mold remediation protocol. Be advised that SWG's issuance of a Mold Remediation Certificate upon successful completion of a Mold Remediation project does not mean, warrant or otherwise guarantee that mold will not be subsequently found in any portion of the Remediation Area or the Site.

3.0 SITE DESCRIPTION AND REMEDIATION AREAS

3.1 Site Description

Based on the information provided by the Client, the Site consists of the back wall of the Library within BB Owen Elementary School.

3.2 Remediation Areas

Mr. Paul Siddall of the Lewisville Independent School District has identified the following physical portions of the Site as the "Remediation Areas" for performance of the Services: interior sheet rock on exterior wall within the Library. The Site diagram in Appendix A depicts the Remediation Area of the Site. SWG's Post Remediation Mold Assessment and Clearance Services will be limited to the Remediation Area. Additional areas or portions of the Site are out-of-scope and not covered by the Services or this report.



4.0 MOLD ASSESSMENT AND MOLD ANALYTICAL RESULTS

4.1 Post-Remediation Mold Assessment Results

SWG conducted its final Post-Remediation Mold Assessment reconnaissance on May 13, 2013. SWG's reconnaissance of Remediation Areas revealed that remediation containment structures were in place and air filtration was observed to be operating. SWG's visual reconnaissance showed the Remediation Areas, to be free of all visible mold and wood rot. Photographs documenting the condition of the Remediation Areas are contained in Appendix B.

In conjunction with its visual reconnaissance of the Remediation Areas, SWG reviewed the Mold Remediation Protocol and Mold Remediation Work Plan for the Remediation Areas. SWG's visual reconnaissance of the Remediation Areas indicated that the Mold Remediation Contractor conducted the mold remediation activities in general accordance with the Mold Remediation Protocol and the Mold Remediation Work Plan for the Remediation Areas. Copies of the Mold Remediation Protocol and the Mold Remediation Work Plan are contained in Appendix C and D, respectively.

4.2 Mold Analytical Results

The abatement was performed within one containment. SWG collected two samples inside the containment and two exterior samples utilizing Air O Cell cassettes.

Air O Cell refers to slit impaction air sampling cassette manufactured by Zefon. The collection media for these devices consist of a coverslip coated with a sticky transparent "acrylic" substrate. Containment clearance is contingent upon passing a visual and procedural inspection by an SWG representative in addition to obtaining air monitoring results indicating that airborne mold spore concentrations inside the containment are no more than 40% of those obtained outside the structure at the time the sampling was performed. In addition, nontarget airborne mold spore concentrations must be similar inside the containment than those obtained outside the structure at the time the sampling was performed. Target molds should be individually less than or equal to outside levels. However, no levels of Stachybotrys will be accepted.

The target list of molds would generally include, but are not limited to, Aspergillus, Penicillium, Aureobasidium, Chaetomium, Fusarium, Trichoderma, Stachybotrys, and Ulocadium.

Upon collection, samples were identified and a chain-of custody-form was prepared. Two clearance testing sampling events were performed on separate dates within the containment area. The samples were submitted to Steve Moody Micro Services (SMMS) for subsequent analysis. SMMS is licensed by the State of Texas and maintains in-house quality control/quality assurance programs for their laboratory services.

Total fungal spore concentrations within the containment that achieved clearance on May 13, 2013 ranged from 40 to 60 counts/m³ while the exterior

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levels ranged from 30,986 to 37,046 counts/m³. Analytical reports are contained in Appendix E.

Laboratory analytical results for the samples confirm that the mold clearance criteria set forth in the Mold Remediation protocol were successfully achieved.

4.3 Underlying Cause of Mold

Based upon the documentation provided to SWG (copy attached in Appendix F), the source of moisture was identified as: moisture due to penetration from outside brick wall.

Based upon the documentation provided by Mr. Paul Siddall of LISD the underlying source of moisture causing mold in the Remediation Areas will be successfully remediated. A copy of this documentation is contained in Appendix F.

5.0 FINDINGS

SWG's findings are as follows:

- Based upon SWG's visual reconnaissance of the Remediation Areas on May 13, 2013 the Remediation Area is free from all visible mold and wood rot.
- Based upon SWG's visual reconnaissance of the Remediation Areas and review of the Remediation Protocol for the project, the remediation work was completed in compliance with the Remediation Protocol.
- Based upon SWG's visual reconnaissance of the Remediation Areas and review of the Remediation Work Plan for the project, the remediation work was completed in compliance with the Remediation Work Plan.
- Based upon the moisture intrusion report prepared by Mr. Paul Siddall, the moisture source identified as the underlying cause of the mold was moisture due to penetration from outside brick wall. Based the information provided to SWG by Mr. Siddall, the source will be properly remediated such that it is reasonably certain that the mold will not return from that remediated cause.
- Temperature and relatively humidity readings were taken during the post remediation inspection on May 13, 2013. Temperature readings ranged from 68.7 to 68.9 degrees Fahrenheit inside the containment while relative humidity ranged from 33.3 to 33.4 percent. Temperature readings taken outside the building ranged from 66.5 to 66.7 degrees Fahrenheit while relative humidity ranged from 34.1 to 34.3 percent.
- Moisture meter readings were taken on the drywall adjacent to the abated area. Moisture meter measurements of the drywall ranged from 8 to 10 percent which is considered dry based on the manufacture's guidelines.

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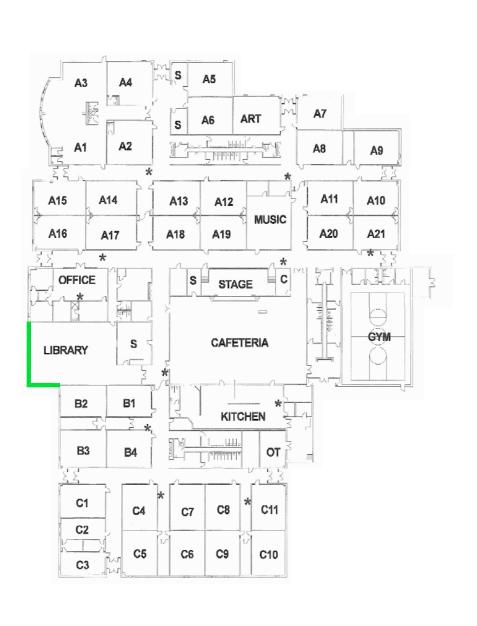
Based upon SWG's visual reconnaissance of the Remediation Area(s) and its clearance sampling analytical results, the remediation activities were successfully completed by the Remediation Contractor and meet the clearance criteria specified in the Remediation Protocol. A copy of SWG's Mold Assessor) portion of the Mold Remediation Certificate (on Texas Department of Insurance Form MDR-1) in contained in Appendix F.

6.0 CONCLUSIONS

The mold remediation activities in the Remediation Area has been successfully completed, passed clearance, and the Remediation Areas approved for reconstruction.



Appendix A Site Diagram



LEGEND:

FUNGAL GROWTH

DRAWING NOT TO SCALE FUNGAL GROWTH LOCATIONS ARE APPROXIMATE

BB Owen Elementary School Library

5640 Squires The Colony, Texas

SWG Project No. 0113H113A



Figure 1

Fungal Growth Location Map



Appendix B

Photographs



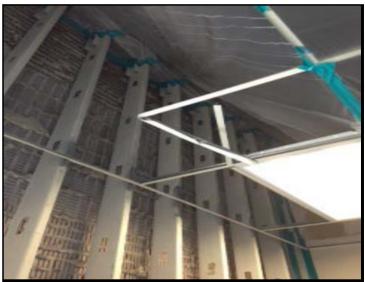
1.) View of remediated areas.



2.) View of remediated areas.



3.) View of remediated areas.



4.) View of remediated areas.



5.) View of remediated areas.





APPENDIX C

Mold Remediation Protocol

MOLD REMEDIATION PROTOCOL

B.B. Owen Elementary School Library 5640 Squires The Colony, Texas

> May 8, 2013 Project No. 0113H113A

Prepared for:

Lewisville Independent School District 340 Lake Haven Lewisville, Texas 75057 Attention: Mr. Paul Siddall

Darren G. Bowden

Mold Assessment Consultant Texas License No. MAC0321

Expiration Date: 02/15/2014

Prepared by:



2351 W. Northwest Hwy., Suite 3321 Dallas, Texas 75220 Ph: (214) 350-5469

Fax: (214) 350-2914



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VI Notification

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PROJECT/WORK IDENTIFICATION

<u>General</u>: Project name is Mold Remediation, BB Owen Elementary School, Library, 5640 Squires, The Colony, Texas, dated May 8, 2013.

I. Material Description and Quantities

Briefly and without force and effect upon the contract documents, the work of the Contract can be summarized as the removal of fungal growth and associated sheetrock and shelving in the following approximate quantities: **

Fungal Growth associated with Sheetrock and Shelving 200 SF

**Quantities listed are estimates only.

II. Work Practices

A. Respiratory Protection (at a minimum):

During the removal of the fungal growth, the workers will be required to wear, at a minimum, half-face air purifying respirators. The workers will be fit tested in accordance with current OSHA guidelines.

B. Protective Clothing:

During removal, workers will be required to wear disposable, full body coveralls, head covers, boots, goggles/eye protection and rubber gloves. Sleeves at wrists and cuffs at ankles shall be secure. Work clothes will be properly disposed of at the conclusion of work.

Authorized visitors, including the consultant's on-site representative, shall be provided with suitable protective clothing when they are required to enter the work area.

C. Containment:

Materials shall be abated in a full containment. The containment includes at a minimum: an enclosure consisting of two (2) layers of four (4) millimeter polyethylene sheeting on floors, walls and ceiling where applicable, in conjunction with a decontamination unit. Any non-movable objects that remain in the work area shall be sealed with two layers of 6-mil polyethylene sheeting.

Darren G. Bowden



Throughout the remediation activities, notice signs and barrier tape will be utilized to restrict unauthorized access to the work areas. The signs shall be at least eight (8) inches by ten (10) inches in size and shall bear the word, "NOTICE: Mold remediation project in progress" in black on a yellow background. The text of the signs must be legible from a distance ten (10) feet.

The containment will be placed under negative pressure during the project. In addition, air scrubber(s) shall be operated continuously after the remediation until the containment achieves clearance. Dehumidifiers will be utilized as needed to maintain the relative humidity below 60 percent.

No person shall remove or dismantle any walk-in containment structures or materials from a project site prior to receipt by the license mold remediation contractor or remediation company overseeing the project of a written notice from a licensed mold assessment consultant that the project has achieved clearance.

III. Removal

The Contractor will perform the removal and disposal in accordance with current local, state and federal regulations. The materials should be HEPA vacuumed and disinfected with Foster's 40/80, a hospital grade quaternary ammonium chloride disinfectant, or equivalent.

The fungal growth will be removed in conjunction with the sheetrock substrate. Any mold affected wood will be sanded. However, any shelving containing visible fungal growth will be disposed of as construction waste. The work area will be encapsulated with Foster's 40/20 or equivalent.

All porous and non-porous surfaces within the work area and areas adjacent to the work area should be cleaned by simple wet wipe techniques and/or HEPA vacuum. Individuals with known allergies to fungal incitants should not be permitted to work on the project.

IV. Disposal

It is the Consultant's understanding that no special disposal requirements apply to mold waste materials and the waste can be disposed of as general construction waste. However, it is the responsibility of the Contractor to determine current waste handling, transportation, and disposal requirements as it pertains to current local, state and federal regulations. Waste will be containerized (e.g., bagged and goose-necked) inside containment and thoroughly cleaned before leaving the work area. The containers will be transported to the waste container without spillage.

An A. Forder



V. Clearance

SWG will conduct a post-remediation assessment using visual, procedural and analytical methods. The post remediation assessment shall be conducted while the containment is in place. As part of the post-remediation assessment, SWG will determine if the area is free from all visible mold and wood rot and if the remediation has been completed in accordance with this protocol and the contractor's work plan.

Clearance samples will be conducted using slit impaction air sampling cassettes. The collection media for these devices consist of a coverslip coated with a sticky transparent "acrylic" substrate. Containment clearance will require obtaining air monitoring results indicating that airborne mold spore concentrations inside the containment are no more than 40% of those obtained outside the structure at the time the sampling was performed. In addition, nontarget airborne mold spore concentrations must be similar inside the containment than those obtained outside the structure at the time the sampling was performed. Target molds should be individually less than or equal to outside levels. However, no levels of Stachybotrys will be accepted.

The target list of molds would generally include, but are not limited to, Aspergillus, Penicillium, Aureobasidium, Chaetomium, Fusarium, Trichoderma, Stachybotrys, and Ulocadium.

SWG is not a moisture intrusion assessment company. The client will retain responsibility for moisture intrusion remediation. The Client is encouraged to investigate the moisture intrusion and solicit a moisture intrusion remediation company to remediate the underlying cause of mold.

VI. Notification

The contractor is responsible for proper notification, if required, to all regulatory agencies having authority over proposed work including but not limited to city, county, state, and federal agencies. The TDSHS will be notified five (5) working days prior to the initiation of remediation activities on projects where more than twenty-five contiguous square feet of mold growth is scheduled for removal.

VII. Applicable Publications

The publications listed below form a part of this specification to the extent referenced. The publications are referenced in text by basic designation only and may not be fully conclusive. The Contractor shall be aware and compliant with all current regulations.

- A. Texas Department of State Health Services (TDSHS), Division of Occupational Health, Texas Mold Remediation Rules (TMARR), Texas Civil Statutes.
- B. National Institute for Occupational Safety and Health (NIOSH): "Respiratory Protection...A Guide for the Employee."

Am A Embe



- C. American National Standards Institute (ANSI): Z86.1-197³...Commodity Specification for Air
- D. Code of Federal Regulations (CFR):
 - 1. 29 CFR 1910.1001, Occupational Safety and Health Act (OSHA)
 - 2. 20 CFR 1910.20, Subpart C, General Safety and Health Provisions

VIII. Construction Notes

The Contractor will be responsible for routing water and electricity to the work areas. Water will be used only as needed to limit dust-related emissions and perform decontamination activities. No materials will be saturated with water during any part of this remediation project.

HVAC registers and ductwork present in the work areas are to be wiped and sealed by the Contractor prior to the initiation of remediation activities. The HVAC system is to be shutdown prior to and during the work.

The Contractor shall provide all items, articles, materials, operations or methods listed or mentioned including all labor, materials, equipment, applicable permits and notifications and all incidentals necessary and required for their use to complete the work specified.

Fire extinguishers shall be installed in the Equipment Room and Clean room or inside and outside of the containment if there is no decontamination unit specified.

The Contractor shall conduct a safety meeting for contractor's employees with emphasis on operation of fire extinguishers and emergency exits in case of fire.

Contractor's employees shall not wear protective clothing and equipment in areas of the building outside the work area.

The Consultant will not be responsible for site safety, or the ways and means utilized by the Contractor.

Neither the Contractor nor the Consultant is responsible for identification or the elimination of moisture intrusion.

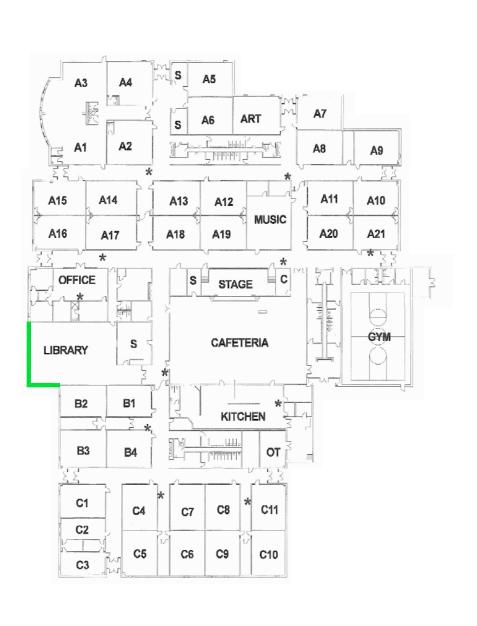
Ground-fault circuit interrupter (GFCI) units shall be installed on all electrical circuits used within the regulated areas(s).

The Owner or Owner's representative has the authority to stop the remediation work at any time he/she determines that conditions are not within the specified mold remediation protocol and applicable regulations. The work stoppage shall continue until conditions have been corrected and measures have been taken to the satisfaction of the owner. Standby time required to resolve violations shall be at the Contractor's expense.

END OF SECTION

Darren G. Bowden

- A End



LEGEND:

FUNGAL GROWTH

DRAWING NOT TO SCALE FUNGAL GROWTH LOCATIONS ARE APPROXIMATE

BB Owen Elementary School Library

5640 Squires The Colony, Texas

SWG Project No. 0113H113A



Figure 1

Fungal Growth Location Map



APPENDIX D

Remediation Work Plan

BIO-REMEDIATION WORK PLAN

Project Information:

Lewisville ISD
B.B. Owen Elementary School
Library
5640 Squires Drive
The Colony, Texas 75056

Prepared By:

ARC Abatement, Inc. 2710 National Place Garland, TX 75041

Mold Company License #RCO-0163
Expires: 03-09-15
Mold Remediation Contractor License #MRC-0356

Project Consultant:

Mr. Darren Bowden
Southwest Geoscience
2351 W. Northwest Highway, Suite 3321
Dallas, Texas 75220
Mold Consultant License # MAC-0321

May 09, 2013

James B. Metcalf

Mold Contractor License #MRC – 1243

Expires: 12-12-13

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MOLD REMEDIATION WORK PLAN

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CONTAINMENT PROCEDURES

CLEARANCE PROCEDURES AND CRITERIA

MOLD REMEDIATION WORK PLAN

The following Mold Remediation Work Plan follows the requirements set forth in 25 TAC 295.321 (e). The following Mold Remediation Protocol is based on the following Mold Protocol:

Prepared on:

May 08, 2013

Performed by:

Darren Bowden

License #:

MAC 0321

APPLICABLE RULES AND GUIDELINES FOR REMEDIATION

The following documents were reviewed prior to developing this Work Plan. Some of these documents regulate the remediation process while others provide general guidance for the remediation process:

- Texas Department of State Health Services, Indoor Air Quality Division, *Texas Mold Assessment and Remediation Rules*, *25 TAC 295.301 338*, May 2004.
- Occupational Safety and Health Administration, *Respiratory Protection*, 29 CFR Parts 1910 .134, January 1998.
- U.S. Department of Labor, Occupational Health and Safety Administration, *A Brief Guide to Mold in the Workplace*.
- Environmental Protection Agency, Office of Air and Radiation, Indoor Environments Division. *Mold Remediation in Schools and Commercial Buildings*. March 2001. EPA 402-K-01-001.
- New York City Department of Health, Bureau of Environmental and Occupational Disease Epidemiology. Guidelines on Assessment and Remediation of Fungi in Indoor Environments. November 20, 2000.
- Institute of Inspection, Cleaning and Restoration, *IICRC S520, Standard and Reference Guide for Professional Mold Remediation*, December 2003.
- National Air Duct Cleaners Association, Assessment, Cleaning, and Restoration of HVAC Systems, 2001.
- OSHA Respiratory Protection Standard, 29 CFR Parts 1910 and 1926.
- · Current industry best practices and guidelines.

REMEDIATION AREAS AND ESTIMATED QUANTITIES

The contaminated areas to be addressed by this Mold Remediation Work include the following area(s) located in B.B. Owen Elementary School Library

Remediation Area Approximate

Square Footage Specific Location

Approximately 200 sf or more of Fungal Growth with associated drywall and shelving.

REMEDIATION METHODS DESCRIPTION OF THE WORK

PROJECT DESIGN FOR:

Wall System Mold Remediation

- Install critical barriers constructed of two layer of 6-mil plastic sheeting (to separate the work area from adjacent areas and to any penetrations) and seal all HVAC ducts with a minimum of one layer of 6-mil plastic sheeting. Install critical barriers so they remain sealed for the duration of the project. The contractor shall establish a worker decontamination enclosure equipped with a 2-stage dry decontamination unit. All bags, equipment, etc. shall exit the enclosure shall be wet-wiped and cleaned.
- 2. Contractor shall use appropriate respirator and clothing (Ty-vek suit) as required when in the work area. When leaving each individual work area, contractor shall remove respirator and Ty-vek suit may remain on but must be HEPA-vacuumed or the suit removed and properly disposed of prior to exiting the work area. These procedures should be followed when mold/mildew damaged wall sheathing and insulation materials are identified on the interior faces of the wall cavity system. Respiratory protection shall be, at a minimum, dual cartridge air purifying respirators equipped with HEPA filters. The respiratory assessment to determine the required protection is the responsibility of the contractor.
- 3. Install air scrubbers (negative air filtration units) within the work areas as required.
- 4. All water damaged or mold/mildew on sheetrock in the work area, should be removed and disposed of beyond any visible water or mold/mildew damage on remaining surfaces. Any remaining water mold/mildew damaged sheetrock walls in the work area should be removed in locations identified in SWG visual assessment. Remediation will commence on May 10, 2013 and Complete on May 14, 2013.

- 5. All Mold Contaminated material is located behind Shelving located next to perimeter wall of Library. The associated drywall & contaminated shelving will be removed and disposed of within the contained work area. The exposed cavity shall be cleaned and sanitized.
- 6. Following the completion of the required remediation, HEPA vacuum clean all exposed wall cavities to remove gross accumulations of dust and debris.
- 7. Manually clean the exposed surfaces and associated items (framing members, walls, piping, conduits, etc.) using brushes and disposable towels. All exposed framing shall be cleaned with a wire brush to remove any staining and discoloration and sanitized with a biocide (EPA approved for intended use).
- 8. Following the initial manual cleaning, treat all surfaces within the work area with a biocide (EPA approved for intended use).

 Manually clean the wall cavities a second time (if required to remove any residual materials).
- 9. All materials removed from the building to be disposed of shall be placed in plastic bags; the bags shall be wiped with a biocide and removed from the facility for disposal. Covered buggies will be required to be used to remove bagged materials from the remediation work area.
- 10. In areas where water/mold damage is evident on the sheetrock or sheathing materials existing on the exterior wall system, the remediation contractor will clean, sanitize and treat the affected area. Following the cleaning, the wall cavities shall be coated with anti-microbial coating material (EPA approved for intended use) in areas identified in SWG visual assessment.
- The remediation contractor should place the bagged waste in a covered, lockable container until removed from the site.
- 12. The remediation contractor and SWG shall review and verify that to the best of their knowledge the water mold damaged materials have been removed from the specified work areas and the affected areas have been sanitized.

- 13. Following removal of the remaining water/mold damaged materials, and debris, all areas in the remediation work areas including walls, floors, etc shall be HEPA-vacuumed and cleaned (wiped, sprayed, etc.) with a biocide (EPA approved for intended use).
- 14. All work will be conducted in accordance with federal, state and local regulatory requirements and guidelines. Any items not covered in the remediation protocol should be brought to the attention of SWG promptly.
- 15. Following the completion of the remediation work, SWG will perform airborne microbial (Air-O-Cell) sampling in the work area for post remediation air testing.
- 16. A letter by an officer of the remediation company that all required permits, licenses, registrations and mold remediation training, respiratory fit testing and medical examination have been completed and available on-site. The letter shall include:
 - A list of each employee who will be on-site. The list must give name and social security number.
 - Date and type of all training for each employee on-site.
 - Date of last fit test for each employee on-site.
 - Date of last medical examination for each employee onsite.
 - Texas Department of State Health Services (TDSHS) license or registration number for each employee on-site.

NOTE: All documentation for the above listed items shall be available for review upon request by the Owner or his representative.

- Original executed Certificates of Worker's Release Forms.
- An executed Notification of Mold Remediation submitted to the TDSHS

PRODUCTS

The following products shall be utilized in the remediation project.

- Anti-Microbial Coating: Foster Products Corporation's "Foster 40-20" and "Foster 40-80" fungicidal protective coating, Porter Paints' "Porta-Sept" anti-microbial wall coating, Aegis Environmental's "Aegis Antimicrobial" or approved equivalent. Anti-microbial coating shall be applied according to manufacturer's instructions. Anti-microbial coating shall be allowed to thoroughly dry after application prior to covering.
- Biocide: An Environmental Protection Agency (EPA) registered biocide, such as Foster's, or approved equivalent. Biocide treatment shall be mixed and applied according to manufacture's instructions. After biocide treatment, surfaces shall be allowed to thoroughly dry.
- Cleaning Solution: Trisodium phosphate cleaning solution, such as Sentinel 805 (Sentinel Chemical Company) or approved equivalent. Cleaning solution shall be mixed and applied according to manufacturer's instructions

POST REMEDIATION CLEARANCE TESTING

SWG will conduct a post-remediation assessment using visual, procedural and analytical methods. The post remediation assessment shall be conducted while the containment is in place. As part of the post-remediation assessment, SWG will determine if the area is free from all visible debris and wood rot and if the remediation has been completed in accordance with this protocol and the contractor's work plan. Clearance samples will be conducted using slit impaction air sampling cassettes. The collection media for these devices consist of a cover slip coated with a sticky transparent "acrylic" substrate. Containment clearance will require obtaining air monitoring results indicating that airborne mold spore concentrations inside the containment are no more than 40% of those obtained outside the structure at the time the sampling was performed. In addition, nontarget airborne mold spore concentrations must be similar inside the containment than those obtained outside the structure at the time the sampling was performed. Target molds should be individually less than or equal to outside levels. However, no levels of Stachybotrys will be accepted. The target list of molds would generally include, but are not limited to, Aspergillus, Penicillium, Aureobasidium, Chaetomium, Fusarium, Trichoderma, Stachybotrys, and Ulocadium. SWG is not a moisture intrusion assessment company. The client will retain responsibility for moisture intrusion remediation. The Client is encouraged to investigate the moisture intrusion and solicit a moisture intrusion remediation company to remediate the underlying cause of mold.



APPENDIX E

Analytical Results

Steve Moody Micro Services, LLC

2051 Valley View Lane

DSHS License No.: LAB0117

AIHA EMPAT ID: 102577

Farmers Branch, TX 75234 Phone: (972) 241-8460

Client: Southwest Geoscience - Dallas, TX Lab Job No. 13F-05126

Project: BB Owen, Library Report Date 05/13/2013 1:39 PM

Project #: 0113H113 **Sample Date :** 05/13/2013

Sample Type: Spore Trap, Non-cultured Spore Trap Type: Zefon - Air-O-Cell

Test Method: Mold: ASTM D7391-09 - Standard Profile Page 1 of 2

On 5/13/2013, four (4) samples were submitted by Darren Bowden of Southwest Geoscience - Dallas, TX (located at 2351 W NW Hwy #3321, Dallas, TX 75220) for Spore Trap, Non-cultured mold analysis. This report consists of three sections; a summary section, a data detail section, and an analytical notes section.

Sample Number	Volume (liters)	Sample Description	Identification	Concentration spores/cubic meter
1	150	Inside Containment	Aspergillus / Penicillium Cladosporium Hyphal / Spore Fragments	20 20 20
			Total:	60
2	150	Inside Containment	Basidiospores Hyphal / Spore Fragments	20 20
			Total:	40
3	75	Outside * See Analytical Notes report for further details	Agrocybe Alternaria Ascospores Aspergillus / Penicillium Basidiospores Cladosporium Coprinus Curvularia Drechslera / Bipolaris group Epicoccum Fusarium Hyphal / Spore Fragments Myxomycete / Rust / Smut Ulocladium / Stemphylium	40 1120 2400 480 15466 8080 680 40 120 40 120 1160 1200 40
			Total:	30986

Steve Moody Micro Services, LLC

2051 Valley View Lane

DSHS License No.: LAB0117

AIHA EMPAT ID: 102577

Farmers Branch, TX 75234 Phone: (972) 241-8460

Client: Southwest Geoscience - Dallas, TX Lab Job No. 13F-05126

Project: BB Owen, Library Report Date 05/13/2013 1:39 PM

Project #: 0113H113 **Sample Date :** 05/13/2013

Sample Type: Spore Trap, Non-cultured Spore Trap Type: Zefon - Air-O-Cell

Test Method: Mold: ASTM D7391-09 - Standard Profile Page 2 of 2

On 5/13/2013, four (4) samples were submitted by Darren Bowden of Southwest Geoscience - Dallas, TX (located at 2351 W NW Hwy #3321, Dallas, TX 75220) for Spore Trap, Non-cultured mold analysis. This report consists of three sections; a summary section, a data detail section, and an analytical notes section.

Sample Number	Volume (liters)	Sample Description	Identification	Concentration spores/cubic meter
4	75	Outside * See Analytical Notes report for further details	Agrocybe Alternaria Ascospores Aspergillus / Penicillium Basidiospores Cercospora Cladosporium Coprinus Drechslera / Bipolaris group Epicoccum Fusarium Hyphal / Spore Fragments Myxomycete / Rust / Smut Nigrospora Oidium Paecilomyces	40 1440 2160 160 15866 200 12700 640 240 80 120 560 2520 40 120 160
			Total:	37046

Results may not be reported except in full. Data contained in this test report relates only to the samples tested. This report does not express or imply interpretation of the results contained herein. Interpretation should be made by a qualified professional.

Steve Moody Micro Services assumes no responsibility for the manner in which these samples were collected or handled prior to being received at this laboratory. SMMS assumes no responsibility for the qualifications of personnel performing sampling and/or interpretations of this data.

Analyst(s): Rebecca Lutz

Lab Director: Steve Moody

Approved Signatory:

Thank you for choosing Steve Moody Micro Services

Steve Moody Micro Services, LLC

Data Detail

DSHS License No.: LAB0117

2051 Valley View Lane

AIHA EMPAT ID: 102577

Farmers Branch, TX 75234 Phone: (972) 241-8460

Client: Southwest Geoscience - Dallas, TX Lab Job No.: 13F-05126

Project: BB Owen, Library Report Date: 05/13/2013 1:39 PM

Project #: 0113H113 **Sample Date :** 05/13/2013

Sample Type: Spore Trap, Non-cultured Spore Trap Type: Zefon - Air-O-Cell

Test Method: Mold: ASTM D7391-09 - Standard Profile

Page 1 of 1

This report consists of three sections; a summary section, a data detail section, and an analytical notes section. Results may not be reported except in full.

Sample ID:	1		2		3			4				
Location:	Inside Containment			Inside Containment		Outside			Outside			
Debris Rating:	<u> </u>	1			1		5			5		
Media Expires On:		Apr 201	14		Apr 201	14	Apr 2014			Apr 2014		
Notes Included?:							See Analytical Notes			See Analytical Notes		
Volume:		150		150		75			75			
	raw ct.	MDL	spores/m³	raw ct.	MDL	spores/m³	raw ct.	MDL	spores/m³	raw ct.	MDL	spores/m³
Agrocybe							1	40.00	40	1	40.00	40
Alternaria							28	40.00	1120	36	40.00	1440
Ascospores							60	40.00	2400	54	40.00	2160
Aspergillus / Penicillium	1	20.00	20				12	40.00	480	4	40.00	160
Basidiospores				1	20.00	20	116	133.33	15466	119	133.33	15866
Cercospora										5	40.00	200
Chaetomium												
Cladosporium	1	20.00	20				101	80.00	8080	127	100.00	12700
Coprinus							17	40.00	680	16	40.00	640
Curvularia							1	40.00	40			
Drechslera / Bipolaris group							3	40.00	120	6	40.00	240
Epicoccum							1	40.00	40	2	40.00	80
Fusarium							3	40.00	120	3	40.00	120
Hyphal / Spore Fragments	1	20.00	20	1	20.00	20	29	40.00	1160	14	40.00	560
Memnoniella												
Myxomycete / Rust / Smut							30	40.00	1200	63	40.00	2520
Nigrospora										1	40.00	40
Oidium										3	40.00	120
Paecilomyces										4	40.00	160
Stachybotrys												
Ulocladium / Stemphylium							1	40.00	40			
TOTALS	3		60	2 40		40	403 30986			37046		
Analyst		ebecca			ebecca		Rebecca Lutz			Rebecca Lutz		
Analysis Date	,	5/13/20	13		5/13/20	13	5/13/2013			5/13/2013		

Debris Rating Key:

- 0 No debris detected.
- 1 Trace debris.
- 2 Light debris.
- 3 Moderate debris.
- 4 Substantial debris.
- 5 Extensive debris.
- 6 Field blank.

NOTE: Debris defined as skin, fibers, pollen grains, insect parts, and/or other non-fungal particles.

Steve Moody Micro Services, LLC Analytical Notes DSHS License No.: LAB0117 2051 Valley View Lane AIHA EMPAT ID: 102577

Farmers Branch, TX 75234 Phone: (972) 241-8460

Client: Southwest Geoscience - Dallas, TX Lab Job No.: 13F-05126

Project: BB Owen, Library **Report Date:** 05/13/2013 1:39 PM

Project #: 0113H113 **Sample Date:** 05/13/2013

Sample Type: Spore Trap, Non-cultured Spore Trap Type: Zefon - Air-O-Cell

Test Method: Mold: ASTM D7391-09 - Standard Profile Page 1 of 2 This report consists of three sections; a summary section, a data detail section, and an analytical notes section. Results may not be reported except in full.

Samples Analyzed

Sample No: 3 : Outside

Notes: 20% Occluded. Due to a high presence of Basidiospores, the Minimum Detection Limit is 133 spores /

cubic meter for this fungal group. When comparing results to other samples, use calculated results, not

raw numbers

Due to a high presence of Cladosporium, the Minimum Detection Limit is 80 spores / cubic meter for this fungal group. When comparing results to other samples, use calculated results, not raw numbers.

Sample No: 4 : Outside

Notes: 20% Occluded. Due to a high presence of Basidiospores, the Minimum Detection Limit is 133 spores /

cubic meter for this fungal group. When comparing results to other samples, use calculated results, not

raw numbers.

Due to a high presence of Cladosporium, the Minimum Detection Limit is 100 spores / cubic meter for this fungal group. When comparing results to other samples, use calculated results, not raw numbers.

Field Blanks

No discernable field blanks were submitted with this set of samples.

NOTE: All remaining samples suitable for analysis.

Methods

Method: ASTM D7391-09: Categorization and Quantification of Airborne Fungal Structures in an Inertial Impaction Sample by Optical Microscopy.

Calculation: Spores/cubic meter = (Raw spore count)*(MDL)

Note: MDL (Minimum Detection Limit) is calculated based upon 1 raw spore count.

Steve Moody Micro Services recommends two significant figures for calculated values based on ASTM D7391-09.

This report must not be used by the customer to claim product certification, approval, or endorsement by AIHA, ISO, or any agency of the Federal Government.

Steve Moody Micro Services, LLC Analytical Notes DSHS License No.: LAB0117 2051 Valley View Lane AIHA EMPAT ID: 102577

Farmers Branch, TX 75234 Phone: (972) 241-8460

Client: Southwest Geoscience - Dallas, TX Lab Job No.: 13F-05126

Project: BB Owen, Library Report Date: 05/13/2013 1:39 PM

Project #: 0113H113 **Sample Date :** 05/13/2013

Sample Type: Spore Trap, Non-cultured Spore Trap Type: Zefon - Air-O-Cell

Test Method: Mold: ASTM D7391-09 - Standard Profile Page 2 of 2 This report consists of three sections; a summary section, a data detail section, and an analytical notes section. Results may not be reported except in full.



LAB#102577

Chain of Custody

Page of



Lab Job #	13F.05/26 AOCY
Lab Job #	
Lab Job#_	

*Ple

			00#
	e for immediate, after-hour, & weekend pricing & availability. ture Samples subject to Culture Growth**	*	
ASBESTOS P Bulk	· · · · · ·	mediate	ASBESTOS TEM Air AHERA Method
PCM Air (740 TOTAL DUS	00)] Immediate	Water
Analyze	☐ Air Standard Profile ☐ Air Expanded I	nmediate Profile	BACTERIA Heterotrophic Plate Count (HPC) HPC + Gram Stain HPC + 3 Gram Neg ID HPC + 5 Gram Neg ID Fecal Coliform (MPN) Total Coliform & E Coli (P/A) BACTERIA G-8 day G-9 day
	conv./ City.		# of Samples:
	pany / City: SWG		
	Company: SWF		
Duplinati	lame: D. Bowder		Phone #:
Project:	BB Owen - Library		Mobile #:
E-mail Result	rmation: Name:		
Invoice Addre			P.O. #:
		ad (damaged (av	pired samples or excessive administrative requests may incur additional fees—
	rwork and samples before submitting to tub. Unseated / improperty package	eu / uumugeu / exj	pirea samples or excessive auministrative requests may incur audinoral jees—
Notes:		Y 37-1 / A	
Sample #	Sample Description	Vol. / Area	
ı	Inside Containment	150	
Z	11 11	150	
3	outsite	75	
4		75	
		 	
1			
Released By:	Date / Time:	Received By:	Date/Time:
Released	Date / Time:	Received By:	5-13-13 //1:08 Date / Time:
Released by.	Date / Time.	Received By.	



APPENDIX F

Moisture Intrusion Remediation Statement & MDR-1 Form

Veronica Jackowski

To: Darren Bowden

Subject: RE: B. B. Owen ES Library Remediation

From: Darren Bowden [mailto:darren.bowden@southwestgeoscience.com]

Sent: Thursday, June 13, 2013 3:51 PM

To: 'Veronica Jackowski'

Subject: FW: B. B. Owen ES Library Remediation

From: Siddall, Paul [mailto:siddallp@lisd.net]
Sent: Thursday, June 06, 2013 7:18 AM

To: Darren Bowden

Subject: B. B. Owen ES Library Remediation

Darren...

Here is the Statement for B. B. Owen ES Library: The cause for the mold identified in the Library was moisture penetration from the outside brick wall . This will be repaired by sealing the outside brick, by direction of PBK. Therefore, I certify with reasonable certainty that the underlying cause or causes of the mold that were identified for this project in the remediation protocol will be remediated.

Paul Siddall Special Projects (IAQ) Facility Services Lewisville ISD

CERTIFICATE OF MOLD DAMAGE REMEDIATION

Certificate Number 13-03-080	Date of Issuance_0	5-13-2013
Name BB Owens Elementary School		
Mailing Address 5640 Squires		
City The Colony	State Texas	Zip75056
Property Description:		
Name/DescriptionBB Owens Eleme	entary School	
Number 5640 Street Squ	ires Lot	N/A Block Unknown
Addition or Tract_Interior Library	City_The Co	ony County Collin
		William Control of the Control of th
Mold Assessment Consultant License	Holder Certification	
for this project has been remed	iated as outlined in the mold mar	evaluation, the mold contamination identified nagement plan or remediation protocol.
for this project in the mold man	agement plan or remediation pro	se or causes of the mold that were identified of tocol have been remediated. A copy of the been provided to the person named in this
Dan A. Fil	MACO321/2/151	12014 5/13/13
Mold Assessment Consultant License Holder Signature	Department of State Health Service Mold Assessment Consultant License No. and Expiration Da	
Mold Remediation Contractor License	Holder Certification	
I hereby certify that I complete certificate to the property owner	ed mold remediation on this pro no later than the 10 th day after the	oject and will provide the mold remediation ne date of completion.
A. R. W. T.		
Mold Remediation Contractor License Holder Signature	MRC-1243 Department of State Health Service Mold Remediation Contractor License No. and Expiration Date	Completion
Mold Assessment Consultant or Adjus	stor License Holder Certification	10
 I hereby certify that I have in inspection I have determined the 	spected the property described not the property does not contain	I in this certificate and that based on my n evidence of mold damage. A copy of the been provided to the person named in this
N/A	N/A	N/A
Mold Assessment Consultant / Adjuster License Holder Signature	Department of State Health Service: Mold Assessment Consultant Adjuster License No. and Expiration Date	



APPENDIX G

Licenses



TEXAS DEPARTMENT OF STATE HEALTH SERVICES

Be it known that

SWG CONSULTANTS INC. DBA SOUTHWEST GEOSCIENCE

is licensed to perform as a

Mold Assessment Company

in the State of Texas and is hereby governed by the rights, privileges, and responsibilities set forth in Title 25, Texas Administrative Code, Chapter 295, relating to Texas Mold Assessment and Remediation Rules, as long as this license is not suspended or revoked.

Fried Thy

David Lakey, M.D. Commissioner of Health

License Number: ACO1013

Expiration Date: 9/18/2014

Control Number: 6644

(Void After Expiration Date)



Texas Department of State Health Services

Mold Assessment Consultant

DARREN G BOWDEN

License No. MAC0321

Control No. 7461

Expiration Date: 2/15/2014





TEXAS DEPARTMENT OF STATE HEALTH SERVICES

BE IT KNOWN THAT

DARREN G BOWDEN

is hereby licensed and authorized to perform as a

Mold Assessment Consultant

Title 25, Texas Administrative Code, Chapter 295, relating to Texas Mold Assessment and Remediation in the State of Texas and is hereby governed by the rights, privileges, and responsibilities set forth in

Rules, as long as this license is not suspended or revoked.

Third Things

David L Lakey, M.D Commissioner of Health

License Number: MAC0321

Control Number: 7461

Expiration Date: 2/15/2014
(Void After Expiration Date)

VOID IF ALTERED NON-TRANSFERABLE