



December 17, 2015

Project No. 01.GSAVA15.15

Mr. Jonathan Leong
San Francisco Veteran Affairs Medical Center
4150 Clement Street
San Francisco, CA 94116

Subject: Confirmation Asbestos and Lead Sampling Report
San Francisco Veterans Affairs Medical Center
Building 200 – Outpatient Pharmacy Renovation Project
4150 Clement Street
San Francisco, CA 94116

Dear Mr. Leong:

EnviroApplications, Inc. (*EAI*) has prepared the following report presenting the results of confirmation asbestos and lead sampling activities at the San Francisco Veterans Affairs Medical Center (SFVAMC), located at 4150 Clement Street, in the City of San Francisco, California (the Site). The objective of the sampling was to sample potential asbestos containing materials and lead materials in Building 200 in support of the outpatient pharmacy renovation project, which may disturb the materials. Samples were collected using the methods presented in the Federal Asbestos Hazard Emergency Response Act (AHERA) regulations (40 CFR, Part 763) and the Department of Urban Housing (HUD) as a guideline. A brief discussion of the findings are presented herein.

SAMPLING ACTIVITIES

On December 7, 2015, as part of the sampling activities, 12 asbestos bulk material samples and 1 lead material sample were collected from various locations in Buildings 200. All samples were submitted to Micro Analytical Laboratories, Inc. (MAL), of Emeryville, California. Samples containing multiple layers were separated by layer at the laboratory and analyzed as individual samples, in accordance with the analytical method. Potential ACM samples were analyzed using Polarized Light Microscopy (PLM) by U.S. Environmental Protection Agency (EPA) Method 600/R-93/116 and potential LBP samples were analyzed using EPA SW-846 LEAD-TTLC. All laboratory analyses were reported to have been conducted in accordance with methodology approved by the EPA. MAL is accredited under the National Institute of Standards and Technology's National Voluntary Laboratory Accreditation Program.

FINDINGS

Asbestos Results

According to the EPA, ACM is defined as material containing more than one percent (>1.0%) asbestos by volume. The California Occupational Safety and Health Administration (Cal-OSHA) defines ACM, for the purpose of worker protection, as material containing greater than one tenth of one percent (>0.1%) asbestos by volume. **None of the samples collected were found to be ACM.**

Lead-Based Paint Results

According to the EPA, LBP is defined as paint containing more than 5,000 mg/kg of lead. Based on the sample results, **none of the materials sampled were found to be lead-based (>5,000 mg/kg lead).**

A further description of the material sample locations and laboratory results are provided in the enclosures. Material sample locations are described in the attached Tables and shown on the attached Figures.

Recommendations

No materials sampled were found to contain asbestos or lead. Should suspect materials be found that have not been previously sampled, it is recommended that a sample be collected and the material(s) remain undisturbed until the sample analytical results are obtained. Additionally, *EAI* recommends that during activities that could cause disturbance creating airborne dust, respiratory protection be used. In general, work should be conducted in accordance with federal, state and local regulations, including, but not limited to, the EPA National Emission Standard for Hazardous Air Pollutants (NESHAP), the California Occupational Safety and Health Administration (Cal-OSHA) and the Bay Area Air Quality Management District (BAAQMD) and the HUD. A summary of asbestos regulations is attached herein.

If you have any questions or comments regarding the information enclosed herein, please contact the undersigned at your convenience.

Respectfully submitted,

EnviroApplications, Inc.



Amanda K. Santifer, C.A.C.
Project Scientist
CA Certified Asbestos Consultant ID#05-3888

Enclosures: Statement of Limitations
 Table 1 – Summary of Analytical Results
 Table 2 – Summary of Lead Sample Analytical Results
 Field Logs
 Figures
 Summary of Current Regulations
 Laboratory Analytical Reports and Chain-of-Custody

STATEMENT OF LIMITATIONS

The conclusions and recommendations contained in this report/assessment are based upon professional opinions with regard to the subject matter. These opinions have been arrived at in accordance with currently accepted standards and practices applicable to this location and are subject to the following inherent limitations:

- The data and findings presented in this report are valid as of the dates when the investigations were performed. The passage of time, manifestation of latent conditions or occurrence of future events may require further exploration at the site, analysis of the data, and reevaluation of the findings, observations, and conclusions expressed in the report.
- The data reported and the findings, observations, and conclusions expressed in the report are limited by the Scope of Work.
- Unless otherwise stated in the report, because of the limitations stated above, the findings observations, and conclusions expressed by *EAI* in this report are not, and should not be, considered an opinion concerning the compliance of any past or present owner or operator of the site with any federal, state or local law or regulation.
- No warranty or guarantee, whether express or implied, is made with respect to the data or the reported findings, observations, and conclusions, all of which, however, accurately reflect site conditions in existence at the time of investigation.
- *EAI* reports present professional opinions and findings of a scientific and technical nature. While attempts were made to relate the data and findings to applicable environmental laws and regulations, the report shall not be construed to offer legal opinion as to the requirements of, nor compliance with, environmental laws, rules, regulations or policies of federal, state or local governmental agencies. Any use constitutes acceptance of the limits of *EAI's* liability. *EAI's* liability extends only to those parties contracted to complete this project and not to any other parties who may obtain the Report. Issues raised by the report should be reviewed by appropriate legal counsel.
- This report is based, in part, on unverified information supplied to *EAI* by third-party sources. While efforts have been made to substantiate this third-party information, *EAI* cannot guarantee its completeness or accuracy.

TABLE 1
SAMPLE LOG WITH ANALYTICAL RESULTS
San Francisco Veterans Affairs Medical Center
4150 Clement Street
San Francisco, CA 94116

SAMPLE #	SAMPLING LOCATION	MATERIAL DESCRIPTION	ANALYTICAL RESULTS	FRIABLE (Y/N)	CONDITION
01-WB1-01A 01-WB1-01B 01-WB1-01C	Bldg 200 - Rooms 44 & 46	Wallboard with Joint Compound	ND	N	Good
02-WB1-02A 02-WB1-02B	Bldg 200 - Hallway	Black Base Cove and Mastic	ND	N	Good
03-WB1-03A 03-WB1-03B	Bldg 200 - Room 48	1-Inch Brown Ceramic Floor Tile With Beige Mastic & Grey Grout	ND	N	Good
04-WB1-04A 04-WB1-04B	Bldg 200 - Room 48 (Restroom)	2-Inch White Ceramic Wall Tile With Grey Grout & White Glue	ND	N	Good
05-WB1-05A 05-WB1-05B 05-WB1-05C	Bldg 200 - Hallway	White Plaster Over Grey Plaster	ND	N	Good

Table 2
Summary of Lead Sample Analytical Results
San Francisco Veterans Affairs Medical Center
4150 Clement Street
San Francisco, CA 94116

Sample ID	Sample Location	Sample Description	Lead (mg/kg)
PB-01	Building 200 - Room 48 (Restroom)	White Ceramic Tile	1,900

Notes: mg/kg = milligrams per kilogram

DAILY LOG	PAGE <u>1</u> OF <u>1</u>
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PROJECT NAME:	VAMC Bldg. 200	DATE:	12-7-15
SITE ADDRESS:	4150 Clement St, San Fran	PROJECT NUMBER:	R1157067
CLIENT CONTACT:	Jon Leong	RGA REPRESENTATIVE:	Bred Wallenberg
CLIENT PHONE #:			

TIME AND ACTIVITY

09:45 - Terracon arrived onsite and met Jon Leong at the EHS trailer outside the VAMC, and then met with Paul. Terracon was shown to Bldg. 200 to analyze the main hallway near the Pharmacy, specifically the dry wall on the north wall, in addition Terracon was lead to room 48 (restroom) to sample flooring and wall tile, as well as wall panel in adjacent hallway. Finally Terracon was brought to rooms 46 and 44 to have drywall sampled there as well.

11:15 - Terracon found wall of main hallway to be made of plaster instead of drywall. Upon completion Terracon spoke with Paul before ~~leaving~~ the site. An extra sample of ceramic wall tile was sampled ~~by~~ by request of Jon Leong for lead analysis by TLCC. Terracon awaiting approval by Enviro Application before submitting for analysis.

Signature: _____

Date: _____

12-7-15

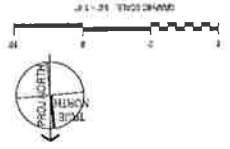
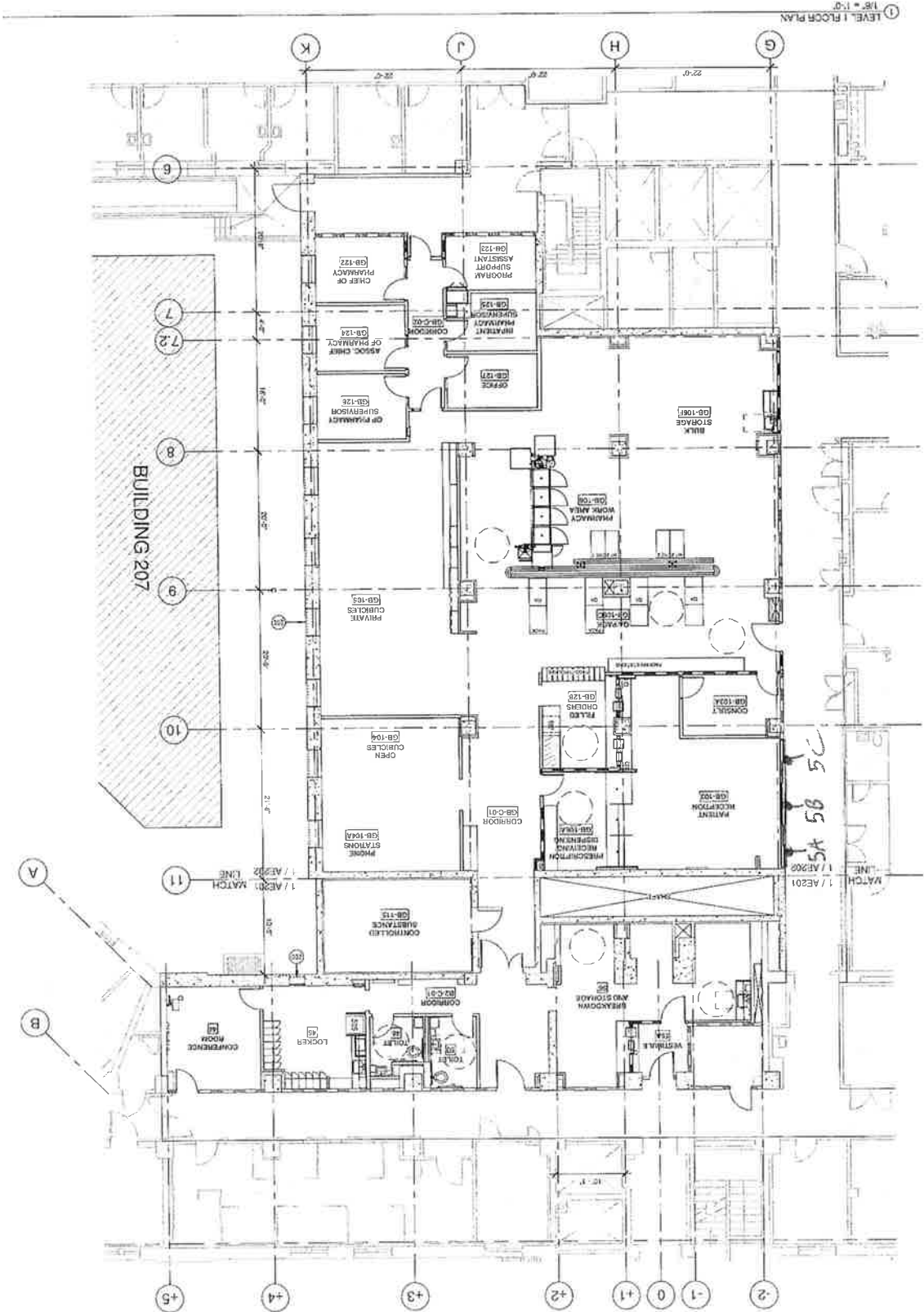
CONSULTANTS:	Structural Engineers: Baker & Baker 8331 West Coast Suite 100 El Cerrito, CA T: (415) 252-1116 F: (415) 252-1116
	Electrical, Plumbing Engineers: The Engineering Group 1125 Foothill Blvd. San Francisco, CA 94116 T: (415) 474-1380 F: (415) 474-1380
	Equipment: 1000 Broadway San Francisco, CA 94102 T: (415) 398-4444 F: (415) 398-4444
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THE DESIGN PARTNERSHIP
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1629 TELEGRAPH AVENUE
SUITE 500
SAN FRANCISCO, CA 94133
T: 415-777-3272
F: 415-777-3476
www.dpd.com



OVERALL FLOOR PLAN
Drawing Title
Project Title
VA SAN FRANCISCO MEDICAL CENTER
OUTPATIENT PHARMACY DESIGN
Location
4150 Clement Street, San Francisco, CA 94121
Date
07/13/15
Checked
JH
Drawn
JH

Office of Construction and Facilities Management
Department of Veterans Affairs
Project Number
B203B2
Drawing Number
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95% CONSTRUCTION DOCS.
FULLY SPRINKLERED
200

KEYNOTES
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SHEET NOTES

SUMMARY OF CURRENT REGULATIONS

The following is a summary of current state and federal regulations which contain requirements related to the performance of building surveys for asbestos. These summaries are not intended to be all inclusive and do not contain every aspect of the regulations discussed. Regulations pertaining to the removal and disposal of ACMs are not included.

EPA NESHAP

Under the National Emission Standard for Hazardous Air Pollutants (NESHAP), 40 CFR Part 61, regulation, no visible emissions are allowed during building demolition or renovation activities which involve regulated asbestos-containing materials (RACMs). For this reason, all buildings must be surveyed for ACMs prior to demolition or renovation. The EPA and/or the local air quality management district which implements EPA actions must be notified prior to any building demolition even if no ACMs are present. RACM is defined as any material with an asbestos content of greater than one percent and is friable, or Category I non-friable ACM that has or will become friable, or Category II non-friable ACM that may become or will become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation.

According to NESHAP, ACM is material containing more than one percent asbestos as determined using the methods specified in Appendix A, Subpart E, 40 CFR Part 763, Section 1, PLM. The NESHAP classifies ACM as friable or non-friable. Friable ACM is ACM that contains more than one percent asbestos and when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.

Non-friable ACM also contains more than one percent asbestos and is further classified as either Category I ACM or Category II ACM. The materials are distinguished by their potential to release fibers when damaged. Category II ACMs are much more likely to release fibers when damaged. Category I ACM includes asbestos-containing gaskets, packings, resilient floor coverings and mastics, and asphalt roofing products. Asphalt roofing products are those products which contain asbestos and include built-up roofing, asphalt-containing single ply membrane systems, asphalt shingles, asphalt-containing underlayment felts, asphalt-containing roof coatings and mastics, and asphalt-containing base flashings. Category II ACM includes all other non-friable ACM; for example: asbestos cement shingles, asbestos cement tiles, and transite boards or panels.

Bay Area Air Quality Management District Regulation 11 (Hazardous Pollutants) Rule 2 (Asbestos Demolition, Renovation and Manufacturing)

In response to the NESHAP requirements, the Bay Area Air Quality Management District (BAAQMD) implemented Regulation 11, Rule 2 that pertains to demolition/renovation activities including the removal and associated disturbance of ACMs. These requirements for demolition and renovation activities include asbestos surveying, notification, ACM removal procedures, time schedules, ACM handling and cleanup procedures, storage, disposal, and landfill requirements for asbestos-containing waste materials. Rule 1403 is applicable to owners and operators of any demolition or renovation activity and associated disturbance of ACMs. Failure to comply with Rule 2 requirements could result in violations that carry daily penalties (penalties assessment is based upon the size of the project and severity of noncompliance).

AHERA

AHERA requires performance of asbestos surveys and the development of Asbestos Management Plans for all of the nation's primary and secondary schools. The general procedures mandated under AHERA are considered the industry standard and are used as guidelines for all surveys performed by *EAI*.

California Occupational Safety and Health Administration (Cal-OSHA)

Per Cal-OSHA standards 1926.1101, ACMs are defined as any materials with an asbestos content greater than one-tenth of one percent ($>0.1\%$) and are further classified as Class I, Class II Class III or Class IV ACM. The materials are distinguished by their potential to release fibers when damaged. OSHA prescribes specific engineering controls and work practices for each Class of ACM.

- Class I This Class refers to ACMs identified as Thermal System Insulation (TSI) or surfacing (sprayed-on or troweled-on) materials. These materials are generally considered friable.
- Class II This Class refers to ACMs identified that are not Thermal System Insulation (TSI) or surfacing materials. These materials are generally considered non-friable.
- Class III This Class refers to repair and maintenance operations of all identified ACMs.
- Class IV This Class refers to incidental contact with identified ACMs such as custodial staff.

California Health and Safety Code

The California Health and Safety Code 25915 (former Connelly Bill) requires all building owners in the State of California to provide written notification to employees, tenants, and contractors of the presence and location of asbestos-containing construction materials (ACCMs) within their buildings. Some exclusions to the notification rule for restricted access areas are

allowed. All documentation related to asbestos surveys (and air monitoring) must be made available to employees, tenants, or contractors for review. ACCMs are defined as any materials with an asbestos content greater than one-tenth of one percent ($>0.1\%$).

The California Health and Safety Code also require that a seller with any knowledge of ACMs on a property disclose such information or knowledge to other parties involved in a real estate transaction.

Asbestos Removal and Building Demolition/Renovation

In accordance with the EPA's NESHAPs regulation and the SCAQMD, all facilities planned for renovation or demolition must be surveyed for ACMs prior to the planned renovation or demolition. Subsequent removal of identified ACMs is also required. Removal involves, to the greatest extent practical, the complete removal, disposal, and replacement, if necessary, of the asbestos-containing building material (ACBM). Removal usually also requires encapsulation of the remaining structure to lock down residual fibers which may exist. Removal of ACMs is required prior to renovation and/or demolition activities.

The EPA and the AQMD require removal of all ACMs prior to demolition or renovation. ACMs include friable ACMs, (Class I) which have or will become friable or that has been subjected to sanding, drilling, grinding, cutting, or abrading; and Class II ACMs that may become or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation.

Trace ACMs are asbestos materials with less than 1 percent, but greater than 0.1 percent asbestos. These ACMs require an abatement plan during demolition that is protective of worker health and safety. However, unlike an EPA ACM, trace ACMs do not necessitate special disposal requirements.

MICRO ANALYTICAL LABORATORIES, INC.

BULK ASBESTOS ANALYSIS - POLARIZED LIGHT MICROSCOPY (PLM)



1023
Mike Benefield
Terracon Consultants, Inc.
1466 66th Street
Emeryville, CA 94608

PROJECT:
JOB NO. R1157067
VAMC

Micro Log In **213410**
Total Samples 12
Date Sampled 12/07/2015
Date Received 12/07/2015
Date Analyzed 12/07/2015

SAMPLE IDENTIFICATION		ASBESTOS INFORMATION QUANTITY (AREA %) / TYPES / LAYERS / DISTINCT SAMPLES	DOMINANT OTHER MATERIALS
Client #:	01-WB1-01A		
Micro #: 213410-01	Analyst: GR	WALLBOARD: NONE DETECTED JOINT COMPOUND: NONE DETECTED TAPE / PAINT: NONE DETECTED	15 % CELLULOSE 1 % FIBROUS GLASS NFM: 'GYPSUM' (CALCIUM SULFATE), CARBONATE.
HM #01 - WALLBOARD WITH JOINT COMPOUND SOUTH WALL ROOM 46			
Client #:	01-WB1-01B		
Micro #: 213410-02	Analyst: GR	WALLBOARD: NONE DETECTED JOINT COMPOUND: NONE DETECTED TAPE / PAINT: NONE DETECTED	20 % CELLULOSE 1 % FIBROUS GLASS NFM: 'GYPSUM' (CALCIUM SULFATE), CARBONATE.
HM #01 - WALLBOARD WITH JOINT COMPOUND EAST END OF SOUTH WALL ROOM 44			
Client #:	01-WB1-01C		
Micro #: 213410-03	Analyst: GR	WALLBOARD: NONE DETECTED JOINT COMPOUND: NONE DETECTED PAINT: NONE DETECTED	10 % CELLULOSE 1 % FIBROUS GLASS NFM: 'GYPSUM' (CALCIUM SULFATE), CARBONATE.
HM #01 - WALLBOARD WITH JOINT COMPOUND WEST END OF NORTH WALL ROOM 44			
Client #:	02-WB1-02A		
Micro #: 213410-04	Analyst: GR	MASTIC (BEIGE): NONE DETECTED COMPOUND: NONE DETECTED	3 % CELLULOSE 2 % SYNTHETIC FIBERS NFM: SYNTHETIC MATERIAL, CARBONATE.
HM #02 WEST WALL HALLWAY			
Client #:	02-WB1-02B		
Micro #: 213410-05	Analyst: GR	MASTIC (BEIGE): NONE DETECTED COMPOUND: NONE DETECTED	3 % CELLULOSE 2 % SYNTHETIC FIBERS NFM: SYNTHETIC MATERIAL, CARBONATE.
HM #02 WEST WALL HALLWAY			

Technical Supervisor:

Gaminí Ranatunga, Ph.D.

12/8/2015

Date Reported

NVLAP Lab Code 101872-0. CA ELAP Certification #1037. Analyses use Polarized Light Microscopy (PLM), Micro Analytical SOP PLM-101. Basic techniques follow the EPA Interim Method for Bulk Insulation Samples (1982), and EPA-600/R93-116 (1993). The 1993 method covers all types of bulk materials and is based on the 1982 Method, with improved analytical techniques for layered samples as required for NESHAP compliance. Asbestos is quantified by calibrated visual estimation. Detection limit is material dependent. Detection of asbestos traces (much less than 1%) may not be reliable or reproducible by PLM. Weight % cannot be determined by PLM. Asbestos with diameter below ~1 µm may not be detected by PLM. Absence of asbestos in dust, debris, and some compact materials, including floor tiles, cannot be conclusively established by PLM, and should be confirmed by Transmission Electron Microscopy (TEM). Interferences may prevent detection of small asbestos fibers, and hinder determination of some optical properties. Tremolite-asbestos or actinolite-asbestos may be indistinguishable by PLM from some similar, non-regulated amphiboles (e.g. the "Libby Amphiboles" richterite and winchite), and should be confirmed by TEM. The lower quantitation limit (reporting limit) of PLM estimation is 1%. The Cal-OSHA definition of asbestos-containing construction material is 0.1% asbestos; however, reliable determination of asbestos percent at this level cannot be done by PLM estimation; PLM Point Counting or TEM weight percent analysis are recommended. Only dominant non-asbestos materials (fibrous and non-fibrous) are listed. This analysis shall not be construed as conclusive for the presence of any reported materials other than asbestos, or for the absence of any non-asbestos material. Common interferences include, but are not limited to: cellulose, fibrous glass, other man-made vitreous fibers, synthetic fibers, elongate fragments of calcium sulfate, talc, wollastonite, animal hair, and other miscellaneous elongate particles. Sample heterogeneity is indicated by listing more than one distinct layer or material on the report. If more than one distinct sample is received in the same container, samples shall be marked with letters and analyzed separately. Layers within a sample are analyzed separately when feasible; if asbestos is detected, percentages are reported for individual layers. Interlayer contamination is possible among any layers in a sample. The notation ND (or "NONE DETECTED") indicates a result of "NO ASBESTOS DETECTED" in a homogeneous sample, or in all layers of a heterogeneous sample. Composite asbestos percentages from multiple layers are applicable only to wallboard / joint compound systems; compositing is based on customers' descriptions of material as "joint compound". Customers are solely responsible for identification and description of bulk materials listed on field forms. Laboratory descriptions may differ from those given by customers. Quality Control (QC): all results have been determined to be within acceptance limits prior to reporting. Reanalyzed samples are denoted by two sets of analyst initials. Unless otherwise stated herein, all samples were received in acceptable condition for analysis. This report must not be used to claim product endorsement by NIST or any U.S. Government agency. This report shall not be reproduced except in full, without the approval of Micro Analytical Laboratories, Inc., and pertains only to the samples analyzed. NFM = Non-fibrous materials.

MICRO ANALYTICAL LABORATORIES, INC.

BULK ASBESTOS ANALYSIS - POLARIZED LIGHT MICROSCOPY (PLM)



1023
Mike Benefield
Terracon Consultants, Inc.
1466 66th Street
Emeryville, CA 94608

PROJECT:
JOB NO. R1157067
VAMC

Micro Log In **213410**
Total Samples 12
Date Sampled 12/07/2015
Date Received 12/07/2015
Date Analyzed 12/07/2015

SAMPLE IDENTIFICATION		ASBESTOS INFORMATION QUANTITY (AREA %) / TYPES / LAYERS / DISTINCT SAMPLES	DOMINANT OTHER MATERIALS
Client #:	03-WB1-03A		2 % CELLULOSE
Micro #:	213410-06 Analyst: GR GR	CERAMIC TILE: NONE DETECTED MASTIC (BEIGE): NONE DETECTED GROUT / MORTAR (GRAY): NONE DETECTED UNDERLAYMENT (BLACK): NONE DETECTED	5 % SYNTHETIC FIBERS NFM: ROCK FRAGMENTS CARBONATE SYNTHETIC MATERIAL
Client #:	03-WB1-03B		2 % CELLULOSE
Micro #:	213410-07 Analyst: GR	CERAMIC TILE: NONE DETECTED MASTIC (BEIGE): NONE DETECTED GROUT / MORTAR (GRAY): NONE DETECTED UNDERLAYMENT (BLACK): NONE DETECTED	5 % SYNTHETIC FIBERS NFM: ROCK FRAGMENTS CARBONATE SYNTHETIC MATERIAL
Client #:	04-WB1-04A		3 % CELLULOSE
Micro #:	213410-08 Analyst: GR	CERAMIC TILE: NONE DETECTED GROUT: NONE DETECTED GLUE (WHITE): NONE DETECTED	NFM: ROCK FRAGMENTS CARBONATE SYNTHETIC MATERIAL
Client #:	04-WB1-04B		3 % CELLULOSE
Micro #:	213410-09 Analyst: GR	CERAMIC TILE: NONE DETECTED GROUT: NONE DETECTED GLUE (WHITE): NONE DETECTED	NFM: ROCK FRAGMENTS CARBONATE SYNTHETIC MATERIAL
Client #:	05-WB1-05A		2 % CELLULOSE
Micro #:	213410-10 Analyst: GR GR	PLASTER (WHITE / GRAY): NONE DETECTED SKIM COAT / PAINT: NONE DETECTED COMPOUND (WHITE): NONE DETECTED	NFM: GYPSUM (CALCIUM SULFATE), CARBONATE.

Technical Supervisor:  12/8/2015
Gamini Ranatunga, Ph.D. Date Reported

NVLAP Lab Code 101872-0. CA ELAP Certification #1037. Analyses use Polarized Light Microscopy (PLM), Micro Analytical SOP PLM-101. Basic techniques follow the EPA Interim Method for Bulk Insulation Samples (1982), and EPA-600/R93-116 (1993). The 1993 method covers all types of bulk materials and is based on the 1982 Method, with improved analytical techniques for layered samples as required for NESHAP compliance. Asbestos is quantified by calibrated visual estimation. Detection limit is material dependent. Detection of asbestos traces (much less than 1%) may not be reliable or reproducible by PLM. Weight % cannot be determined by PLM. Asbestos with diameter below ~1 µm may not be detected by PLM. Absence of asbestos in dust, debris, and some compact materials, including floor tiles, cannot be conclusively established by PLM, and should be confirmed by Transmission Electron Microscopy (TEM). Interferences may prevent detection of small asbestos fibers, and hinder determination of some optical properties. Tremolite-asbestos or actinolite-asbestos may be indistinguishable by PLM from some similar, non-regulated amphiboles (e.g. the "Libby Amphiboles" richterite and winchite), and should be confirmed by TEM. The lower quantitation limit (reporting limit) of PLM estimation is 1%. The Cal-OSHA definition of asbestos-containing construction material is 0.1% asbestos; however, reliable determination of asbestos percent at this level cannot be done by PLM estimation; PLM Point Counting or TEM weight percent analysis are recommended. Only dominant non-asbestos materials (fibrous and non-fibrous) are listed. This analysis shall not be construed as conclusive for the presence of any reported materials other than asbestos, or for the absence of any non-asbestos material. Common interferences include, but are not limited to: cellulose, fibrous glass, other man-made vitreous fibers, synthetic fibers, elongate fragments of calcium sulfate, talc, wollastonite, animal hair, and other miscellaneous elongate particles. Sample heterogeneity is indicated by listing more than one distinct layer or material on the report. If more than one distinct sample is received in the same container, samples shall be marked with letters and analyzed separately. Layers within a sample are analyzed separately when feasible; if asbestos is detected, percentages are reported for individual layers. Interlayer contamination is possible among any layers in a sample. The notation NO (or "NONE DETECTED") indicates a result of "NO ASBESTOS DETECTED" in a homogeneous sample, or in all layers of a heterogeneous sample. Composite asbestos percentages from multiple layers are applicable only to wallboard / joint compound systems; compositing is based on customers' descriptions of material as "joint compound". Customers are solely responsible for identification and description of bulk materials listed on field forms. Laboratory descriptions may differ from those given by customers. Quality Control (QC): all results have been determined to be within acceptance limits prior to reporting. Reanalyzed samples are denoted by two sets of analyst initials. Unless otherwise stated herein, all samples were received in acceptable condition for analysis. This report must not be used to claim product endorsement by NIST or any U.S. Government agency. This report shall not be reproduced except in full, without the approval of Micro Analytical Laboratories, Inc., and pertains only to the samples analyzed. NFM = Non-fibrous materials.

MICRO ANALYTICAL LABORATORIES, INC.

BULK ASBESTOS ANALYSIS - POLARIZED LIGHT MICROSCOPY (PLM)



1023
Mike Benefield
Terracon Consultants, Inc.
1466 66th Street
Emeryville, CA 94608

PROJECT:
JOB NO. R1157067
VAMC

Micro Log In **213410**
Total Samples 12
Date Sampled 12/07/2015
Date Received 12/07/2015
Date Analyzed 12/08/2015

ASBESTOS INFORMATION

SAMPLE IDENTIFICATION

QUANTITY (AREA %) / TYPES / LAYERS / DISTINCT SAMPLES

DOMINANT OTHER MATERIALS

Client #: 05-WB1-05B	PLASTER (WHITE / GRAY): NONE DETECTED SKIM COAT / PAINT: NONE DETECTED	2 % CELLULOSE NFM: 'GYPSUM' (CALCIUM SULFATE), CARBONATE.
Micro #: 213410-11 Analyst: GR HM #05 - WHITE PLASTER OVER GREY PLASTER NORTH WALL OF HALLWAY BUILDING 200		
Client #: 05-WB1-05C	PLASTER (WHITE / GRAY): NONE DETECTED SKIM COAT / PAINT: NONE DETECTED	2 % CELLULOSE NFM: 'GYPSUM' (CALCIUM SULFATE), CARBONATE.
Micro #: 213410-12 Analyst: GR HM #05 - WHITE PLASTER OVER GREY PLASTER NORTH WALL OF HALLWAY BUILDING 200		

Technical Supervisor:

Gamini Ranatunga
Gamini Ranatunga, Ph.D.

12/8/2015

Date Reported

NVLAP Lab Code 101872-0. CA ELAP Certification #1037. Analyses use Polarized Light Microscopy (PLM), Micro Analytical SOP PLM-101. Basic techniques follow the EPA Interim Method for Bulk Insulation Samples (1982), and EPA-600/R93-116 (1993). The 1993 method covers all types of bulk materials and is based on the 1982 Method, with improved analytical techniques for layered samples as required for NESHAP compliance. Asbestos is quantified by calibrated visual estimation. Detection limit is material dependent. Detection of asbestos traces (much less than 1%) may not be reliable or reproducible by PLM. Weight % cannot be determined by PLM. Asbestos with diameter below ~1 µm may not be detected by PLM. Absence of asbestos in dust, debris, and some compact materials, including floor tiles, cannot be conclusively established by PLM, and should be confirmed by Transmission Electron Microscopy (TEM). Interferences may prevent detection of small asbestos fibers, and hinder determination of some optical properties. Tremolite-asbestos or actinolite-asbestos may be indistinguishable by PLM from some similar, non-regulated amphiboles (e.g. the "Libby Amphiboles" richterite and winchite), and should be confirmed by TEM. The lower quantitation limit (reporting limit) of PLM estimation is 1%. The Cal-OSHA definition of asbestos-containing construction material is 0.1% asbestos; however, reliable determination of asbestos percent at this level cannot be done by PLM estimation; PLM Point Counting or TEM weight percent analysis are recommended. Only dominant non-asbestos materials (fibrous and non-fibrous) are listed. This analysis shall not be construed as conclusive for the presence of any reported materials other than asbestos, or for the absence of any non-asbestos material. Common interferences include, but are not limited to: cellulose, fibrous glass, other man-made vitreous fibers, synthetic fibers, elongate fragments of calcium sulfate, talc, wollastonite, animal hair, and other miscellaneous elongate particles. Sample heterogeneity is indicated by listing more than one distinct layer or material on the report. If more than one distinct sample is received in the same container, samples shall be marked with letters and analyzed separately. Layers within a sample are analyzed separately when feasible; if asbestos is detected, percentages are reported for individual layers. Interlayer contamination is possible among any layers in a sample. The notation NO (or "NONE DETECTED") indicates a result of "NO ASBESTOS DETECTED" in a homogeneous sample, or in all layers of a heterogeneous sample. Composite asbestos percentages from multiple layers are applicable only to wallboard / joint compound systems; compositing is based on customers' descriptions of material as "joint compound". Customers are solely responsible for identification and description of bulk materials listed on field forms. Laboratory descriptions may differ from those given by customers. Quality Control (QC): all results have been determined to be within acceptance limits prior to reporting. Reanalyzed samples are denoted by two sets of analyst initials. Unless otherwise stated herein, all samples were received in acceptable condition for analysis. This report must not be used to claim product endorsement by NIST or any U.S. Government agency. This report shall not be reproduced except in full, without the approval of Micro Analytical Laboratories, Inc., and pertains only to the samples analyzed. NFM = Non-fibrous materials.

Invoice to Amanda Santifer

213410

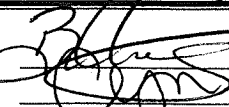
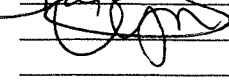
Terracon

<input type="checkbox"/> PM - S. Steiner spsteiner@terracon.com	<input type="checkbox"/> PM - K. Schroeter kmschroeter@terracon.com	<input type="checkbox"/> PM - K. Pilgrim kmpilgrim@terracon.com	ACM BULK SAMPLE DATA SHEET <input checked="" type="checkbox"/> PLM Analysis (Analyze all samples) <input type="checkbox"/> Stop Analysis at First Positive <input type="checkbox"/> Point Count Analysis (400-point)
<input type="checkbox"/> PM - M. Bryant mybryant@terracon.com	<input type="checkbox"/> PM - T. Kattchee takattchee@terracon.com	<input type="checkbox"/> PM - B. Gils regils@terracon.com	
<input checked="" type="checkbox"/> PM - M. Benefield msbenefield@terracon.com	<input type="checkbox"/> PM D. Ufferfilge dufferfilge@terracon.com	<input type="checkbox"/> PM - M. Bishop mrbishop@terracon.com	
<input type="checkbox"/> PM - W. Frieszell wmfrieszell@terracon.com			

PAGE 1 OF 2

Project Name/ Address/ Building No. VAMC
 Project# R1157067 Sampled By: Brad Wallenberg Sampling Date: 12-7-15
 Sample(s) sent to: ☐ RGA ☐ EMSL ☒ Other MAL TAT ☐ Rush ☐ 24HRS ☒ 3-5 days
 *** **FAX OR E-MAIL REPORT TO: SEE ABOVE PROJECT MANAGER (PM)** ***
 *** **ADDITIONAL REPORT RECIPIENT(S): bswallenberg@terracon.com** ***

HM#	Sample ID	Material Description	Sample Location & Material Location	Quantity:
		Wallboard with joint compound		
1	01-WB1-01A	South wall	Room 46	
2	" "01B	E end of S wall	Room 44	
3	01C	W end of N wall	↓	
HM#	Sample ID	Material Description:	Sample Location & Material Location	Quantity:
4	02-02A	W wall	Hallway	
5	" "02B	↓	↓	
HM#	Sample ID	Material Description:	Sample Location & Material Location	Quantity:
		1" red brown ceramic floor tile w/ beige mortar and		
6	03-03A	N end	Room 48	
7	" "03B	W end	↓	
HM#	Sample ID	Material Description:	Sample Location & Material Location	Quantity:
		2" white ceramic wall tile w/ grey grout and		
8	04-04A	W end of S wall	Room 48 (vestroom)	
9	" "04B	S wall	↓	

Relinquished By:	<u>Brad Wallenberg</u>	Signature:		Date/Time:	<u>12-7-15/16:30</u>
Received By:		Signature:		Date/Time:	<u>12/7/15 3:48</u>
Relinquished By:		Signature:		Date/Time:	
Received By:		Signature:		Date/Time:	

<input type="checkbox"/> PM - S. Steiner spsteiner@terracon.com <input type="checkbox"/> PM - M. Bryant mybryant@terracon.com <input checked="" type="checkbox"/> PM - M. Benefield msbenefield@terracon.com <input type="checkbox"/> PM - W. Frieszell wmfrieszell@terracon.com	<input type="checkbox"/> PM - K. Schroeter kmschroeter@terracon.com <input type="checkbox"/> PM - T. Kattchee takattchee@terracon.com <input type="checkbox"/> PM D. Ufferfilge dufferfilge@terracon.com	<input type="checkbox"/> PM - K. Pilgrim kmpilgrim@terracon.com <input type="checkbox"/> PM - B. Gils regils@terracon.com <input type="checkbox"/> PM - M. Bishop mrbishop@terracon.com	ACM BULK SAMPLE DATA SHEET <input checked="" type="checkbox"/> PLM Analysis (Analyze all samples) <input type="checkbox"/> Stop Analysis at First Positive <input type="checkbox"/> Point Count Analysis (400-point)
			PAGE 2 OF 2

Project Name/ Address/ Building No. VAMC Bld. 200
 Project# R1157067 Sampled By: Brad Wallenberg Sampling Date: 12-7-15
 Sample(s) sent to: ☐ RGA ☐ EMSL ☒ Other MAL TAT ☐ Rush ☐ 24HRS ☒ 3-5 days
 *** **FAX OR E-MAIL REPORT TO: SEE ABOVE PROJECT MANAGER (PM)** ***
 *** **ADDITIONAL REPORT RECIPIENT(S):** see pg.1 ***

10	HM# 05	Material Description <u>white plaster over grey plaster</u>
	Sample ID	Sample Location & Material Location Quantity:
	05- -05A	<u>N wall of Hallway</u> <u>Bldg. 200</u>
11	" -05B	
12	-05C	

HM#	Material Description:
Sample ID	Sample Location & Material Location Quantity:

HM#	Material Description:
Sample ID	Sample Location & Material Location Quantity:

HM#	Material Description:
Sample ID	Sample Location & Material Location Quantity:

Relinquished By: <u>Brad Wallenberg</u>	Signature: <u>[Signature]</u>	Date/Time: <u>12-7-15/16:30</u>
Received By: _____	Signature: <u>[Signature]</u>	Date/Time: <u>12-7-15 3:48</u>
Relinquished By: _____	Signature: _____	Date/Time: _____
Received By: _____	Signature: _____	Date/Time: _____

MICRO ANALYTICAL LABORATORIES, INC.**EPA SW-846 LEAD-TTLC**

1023
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1466 66th Street
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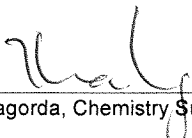
PROJECT:

JOB NO. R1157067
VAMC
BUILDING 200
PHARMACY

Micro Log In **213487**
Total Samples 1
Date Sampled 12/07/2015
Date Received 12/10/2015
Date Analyzed 12/10/2015

Sample ID		Lead Concentration, ppm (mg/Kg)	RDL, ppm (mg/Kg)	Comments
Client	PB-01	1900	220	
Micro 213487-01 WHITE - CERAMIC - WALL - BUILDING #200 ROOM #48 (RESTROOM) - CONDITION I				

Technical Supervisor: _____


Tess Tagorda, Chemistry Supervisor

12/11/2015

Date Reported

Analyst: _____ SM

AIHA-LAPC LLC ELLAP Accredited Laboratory, ID #101768. Samples are analyzed by FLAA in accordance with EPA Methods 3050B for Acid Digestion (SW 846, 3rd edition, 2007) and 7420 for Analysis (SW-846, 3rd edition, 2007). Unless otherwise indicated on this report, all required Quality Control samples have been determined to be in control prior to releasing these analytical results. Unless otherwise stated in this report, all samples were received in acceptable condition for analysis. Note: due to software limitations, the number of reported significant figures does not necessarily reflect the uncertainty of the analysis. This report must not be reproduced except in full without the approval of Micro Analytical Laboratories, Inc., and pertains only to the samples analyzed. Unit explanations: mg = milligrams; kg = kilograms; ppm = parts per million. RDL = Report Detection Limit. Note: mg / Kg is the same as ppm.

Terracon

*** ADDITIONAL REPORT RECIPIENT(S): bswallenberg@terracon.com ***

Relinquished By: Brad Wallenberg Signature: [Signature] Date/Time: 12-9-15/18:10
Received By: AMY Signature: [Signature] Date/Time: 12/10/15 8:45
Received By: _____ Signature: _____ Date/Time: _____