MICRO ANALYTICAL LABORATORIES, INC.

BULK ASBESTOS ANALYSIS - POLARIZED LIGHT MICROSCOPY (PLM)

1084
Monte Deignan
Monte Deignan & Associates
P.O. Box 546
Larkspur, CA 94977

PROJECT:
CRESCENT AVENUE
DEBRIS PILE
SAUSALITO, CA

Micro Log In	**254147**
Total Samples	12
Date Sampled	02/20/2019
Date Received	02/20/2019
Date Analyzed	02/20/2019

SAMPLE IDENTIFICATION	QUANTITY (AREA %) / TYPES / LAYERS ASBESTOS INFORMATION ND = NO ASBESTOS DETECTED	DOMINANT OTHER MATERIALS
Client #: **CAD-01** Micro #: 254147-01 Analyst: LR **DRYWALL AND JOINT COMPOUND** **DEBRIS AT #47-49**	COMPOSITE DW & JC: <1% CHRYSOTILE ASBESTOS **DRYWALL: ND** **JOINT COMPOUND: 2% CHRYSOTILE ASBESTOS** **TAPE / PAINT: ND**	8 % CELLULOSE 4 % FIBROUS GLASS NFM: 'GYPSUM' (CALCIUM SULFATE), CARBONATE.
Client #: **CAD-02** Micro #: 254147-02 Analyst: LR **DRYWALL AND JOINT COMPOUND** **DEBRIS AT #47-49**	COMPOSITE DW & JC: <1% CHRYSOTILE ASBESTOS **DRYWALL: ND** **JOINT COMPOUND: 2% CHRYSOTILE ASBESTOS** **TAPE / PAINT: ND**	8 % CELLULOSE 4 % FIBROUS GLASS NFM: 'GYPSUM' (CALCIUM SULFATE), CARBONATE.
Client #: **CAD-03** Micro #: 254147-03 Analyst: LR **DRYWALL AND JOINT COMPOUND** **DEBRIS AT #47-49**	COMPOSITE DW & JC: <1% CHRYSOTILE ASBESTOS **DRYWALL: ND** **JOINT COMPOUND: 2% CHRYSOTILE ASBESTOS** **TAPE / PAINT: ND**	8 % CELLULOSE 4 % FIBROUS GLASS NFM: 'GYPSUM' (CALCIUM SULFATE), CARBONATE.
Client #: **CAD-04** Micro #: 254147-04 Analyst: LR **DRYWALL AND JOINT COMPOUND** **DEBRIS AT #47-49**	COMPOSITE DW & JC: <1% CHRYSOTILE ASBESTOS **DRYWALL: ND** **JOINT COMPOUND: 2% CHRYSOTILE ASBESTOS** **TAPE / PAINT: ND**	8 % CELLULOSE 4 % FIBROUS GLASS NFM: 'GYPSUM' (CALCIUM SULFATE), CARBONATE.
Client #: **CAD-05** Micro #: 254147-05 Analyst: LR **CEMENT TILE BACKER** **DEBRIS AT #47-49** **RESTROOM**	**CERAMIC TILE: ND** **MORTAR / GROUT: ND**	8 % CELLULOSE NFM: ROCK FRAGMENTS, CARBONATE, BINDER

Technical Supervisor: _____ 2/20/2019
Gamini Ranatunga, Ph.D. Date Reported

NVLAP Lab Code 101872-0. Analyses use Polarized Light Microscopy (PLM), Micro Analytical SOP PLM-101. Basic techniques follow EPA – Appendix E to Subpart E of 40 CFR Part 763; Interim Method for the Determination of Asbestos in Bulk Insulation Samples" (originally published 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 a layer 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)

1084
Monte Deignan
Monte Deignan & Associates
P.O. Box 546
Larkspur, CA 94977

PROJECT:
CRESCENT AVENUE
DEBRIS PILE
SAUSALITO, CA

Micro Log In	**254147**
Total Samples	12
Date Sampled	02/20/2019
Date Received	02/20/2019
Date Analyzed	02/20/2019

SAMPLE IDENTIFICATION	QUANTITY (AREA %) / TYPES / LAYERS ASBESTOS INFORMATION ND = NO ASBESTOS DETECTED	DOMINANT OTHER MATERIALS
Client #: **CAD-06** Micro #: 254147-06 Analyst: RB GR **CERAMIC TILE AND GROUT** **DEBRIS #47-49** **FIREPLACE**	**CERAMIC TILE: ND** **GROUT: ND** **SURFACE COMPOUND ON TILE (WHITE): 2% CHRYSOTILE ASBESTOS**	NFM: CARBONATE CLAY ROCK FRAGMENTS
Client #: **CAD-07** Micro #: 254147-07 Analyst: RB **MORTAR, GRAY** **DEBRIS AT #47-49** **FIREPLACE**	**MORTAR: ND** **FIBERGLASS INSULATION: ND**	5 % FIBROUS GLASS NFM: ROCK FRAGMENTS, CARBONATE, BINDER
Client #: **CAD-08** Micro #: 254147-08 Analyst: RB **MORTAR, GRAY** **DEBRIS AT #47-49** **FIREPLACE**	**MORTAR: ND** **RESIDUAL BRICK: ND**	NFM: CARBONATE CLAY ROCK FRAGMENTS
Client #: **CAD-09** Micro #: 254147-09 Analyst: RB **BRICK, YELLOW** **DEBRIS AT #47-49** **FIREPLACE**	**BRICK: ND**	NFM: CARBONATE, MISC. PARTICLES
Client #: **CAD-10** Micro #: 254147-10 Analyst: RB **BUILT-UP ROOF, BLACK** **DEBRIS AT #47-49**	**SYNTHETIC FIBER FELT: ND** **GLOSSY TAR: ND**	5 % CELLULOSE 20 % SYNTHETIC FIBERS NFM: TAR/ASPHALT, BINDER

Technical Supervisor: _____ 2/20/2019
Gamini Ranatunga, Ph.D. Date Reported

NVLAP Lab Code 101872-0. Analyses use Polarized Light Microscopy (PLM), Micro Analytical SOP PLM-101. Basic techniques follow EPA – Appendix E to Subpart E of 40 CFR Part 763; Interim Method for the Determination of Asbestos in Bulk Insulation Samples" (originally published 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 a layer 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)

1084
Monte Deignan
Monte Deignan & Associates
P.O. Box 546
Larkspur, CA 94977

PROJECT:
CRESCENT AVENUE
DEBRIS PILE
SAUSALITO, CA

Micro Log In	**254147**
Total Samples	12
Date Sampled	02/20/2019
Date Received	02/20/2019
Date Analyzed	02/20/2019

SAMPLE IDENTIFICATION	QUANTITY (AREA %) / TYPES / LAYERS ASBESTOS INFORMATION ND = NO ASBESTOS DETECTED	DOMINANT OTHER MATERIALS
Client #: CAD-11 Micro #: 254147-11 Analyst: RB **BUILT-UP ROOF, BLACK DEBRIS AT #47-49**	**FIBERGLASS FELT: ND** **GLOSSY TAR: ND**	30 % FIBROUS GLASS NFM: TAR/ASPHALT, BINDER
Client #: CAD-12 Micro #: 254147-12 Analyst: RB **TILE / SLATE, GREEN DEBRIS AT #47-49 FIREPLACE**	**GREEN SLATE: ND**	NFM: ROCK FRAGMENTS CLAY

Technical Supervisor: _____ 2/20/2019
Gamini Ranatunga, Ph.D. Date Reported

NVLAP Lab Code 101872-0. Analyses use Polarized Light Microscopy (PLM), Micro Analytical SOP PLM-101. Basic techniques follow EPA – Appendix E to Subpart E of 40 CFR Part 763; Interim Method for the Determination of Asbestos in Bulk Insulation Samples" (originally published 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 a layer 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.

Bulk Sample Log & Laboratory Request Form

Client # :

Log In # : 254147

Monte Deignan & Associates

P.O. Box 546
Larkspur, CA 94977

Tel (415) 927-9038

Client : City of Sausalito
400 Litho Street
City, State : Sausalito, CA
Project Site : **Crescent Ave. Debris Pile**
Sausalito, CA

Collected By : MD Date: 02-20-19

Analysis Requested :

PLM	☒	Rush	☒
TEM	☐	24 Hr.	☐
Pb	☐	48 Hr.	☐
Misc.	☐	72 Hr.	☐

RUSH!

Sample	Sample Description	Sample Location	Notes	Lab #
CAD-01	DRYWALL & JOINT COMPOUND	DEBRIS @ #47-49		1
CAD-02	DRYWALL & JOINT COMPOUND	DEBRIS @ #47-49		2
CAD-03	DRYWALL & JOINT COMPOUND	DEBRIS @ #47-49		3
CAD-04	DRYWALL & JOINT COMPOUND	DEBRIS @ #47-49		4
CAD-05	CEMENT TILE BACKER	DEBRIS @ #47-49	REST ROOM	5
CAD-06	CERAMIC TILE & GROUT	DEBRIS @ #47-49	REST ROOM	6
CAD-07	MORTAR, GRAY	DEBRIS @ #47-49	FIREPLACE	7
CAD-08	MORTAR, GRAY	DEBRIS @ #47-49	FIREPLACE	8
CAD-09	BRICK, YELLOW	DEBRIS @ #47-49	FIREPLACE	9
CAD-10	BUILTUP ROOF, BLACK	DEBRIS @ #47-49		10

Laboratory Name / Address : Microanalytical Laboratory 5900 Hollis Street Emeryville, CA 94608

Released By : Monte Deignan Transfered To: _____ Received By : 2/20/19 1251

Bulk Sample Log & Laboratory Request Form

Client # :

Log In # : 254147

Monte Deignan & Associates

P.O. Box 546
Larkspur, CA 94977

Tel (415) 927-9038

Client : City of Sausalito
400 Litho Street
City, State : Sausalito, CA
Project Site : **Crescent Ave. Debris Pile**
Sausalito, CA

Collected By : MD Date: 02-20-19

Analysis Requested :

PLM	☒	Rush	☒
TEM	☐	24 Hr.	☐
Pb	☐	48 Hr.	☐
Misc.	☐	72 Hr.	☐

Sample	Sample Description	Sample Location	Notes	Lab #
CAD- 11	BUILT UP ROOF, BLACK	DEBRIS @ #47-49		11
CAD- 12	TILE / SLATE, GREEN	DEBRIS @ #47-49	FIREPLACE	12
CAD-				
CAD-				
CAD-				
CAD-				
CAD-				
CAD-				
CAD-				
CAD-				

Laboratory Name / Address : Microanalytical Laboratory 5900 Hollis Street Emeryville, CA 94608

Released By : Monte Deignan Transfered To: _____ Received By : SS 2/20/19 1251

Construction Test & Sampling

Landslide Debris Pile

47-49 Crescent Ave.
Sausalito, CA

Feb 20, 2019 Wednesday
Inspections / Sampling for
Sausalito Pblic Works

01

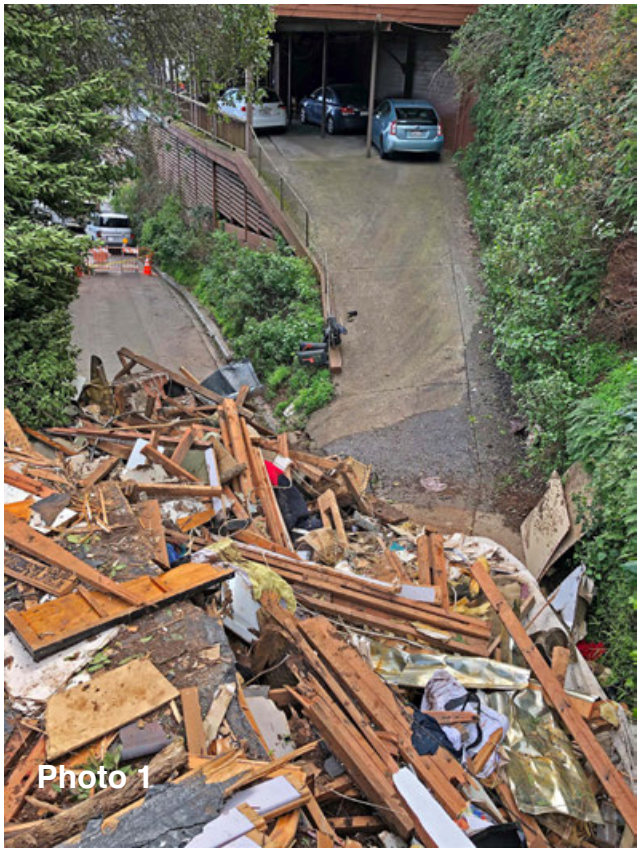
Photo 1


Photo 2


Photo 3

A limited inspection and sampling for asbestos was performed at the debris pile near 47-49 Crescent Ave. The purpose is to analyze approximately 20 feet of the debris pile to allow for its initial removal and disposal to allow additional street access. The debris at the site appears to have been from a duplex on Sausalito Ave. The debris consists of framing lumber, carpet, drywall, roofing, ceramic tile, and furnishings. Additional materials may be found as the debris is removed. A total of 12 samples were submitted for PLM testing.

Photo 1 shows the general composition of the debris pile in front of the driveway at 47-49 Crescent Ave.

Photo 2 shows remnants of HVAC duct work. No asbestos was noted on the ducts. The HVAC elbow is shown in the circle.

Photo 3 shows the remaining built up tar and felt roof that was tested. It appears to be a single layer.

The lab reports that 2% asbestos was found in the drywall joint compounds. The lab results show individual layer analysis and a composite result. At less than 1%, the drywall is not regulated by BAAQMD. Cal / OSHA regulations still apply for levels down to 0.1% asbestos. See the attached lab report for more specifics.

MDA

Monte Deignan
& Associates
Environmental Consulting
Larkspur, CA

Construction Test & Sampling

Landslide Debris Pile

47-49 Crescent Ave.
Sausalito, CA

Feb 20, 2019 Wednesday
Inspections / Sampling for
Sausalito Pblic Works

01

The built up tar and felt roof is still on top of the 2x6 T&G roof structure. The roof lab results were non detect for asbestos, for the debris field at this location.

The gypsum board and joint compounds were positive for 2% asbestos in the compounds. The lab reports a composite result of gypsum board and compound of less than 1% asbestos. See the complete report for more information.

The brick and mortar from the fireplace was tested at this location and no asbestos was detected. Tile, grout, and backer from a bathroom was tested and no asbestos was detected at this portion of the debris pile.