



Asbestos & Lead Based Paint Assessment

City of Spartanburg
183 Boundary Drive
Spartanburg, South Carolina 29303

Prepared for:

The City of Spartanburg
440 South Church St., Suite B
Spartanburg, South Carolina 29306

Prepared by:

Apex Environmental Management, Inc.
7 Winchester Court
Mauldin, South Carolina 29662

Project Number: 0521-99

October 29, 2021





Apex Project Number 0521-99

October 29, 2021

Mr. Jeff Tillerson
City of Spartanburg
440 South Church Street, Suite B
Spartanburg, SC 29306

Reference: Asbestos and Lead-Based Paint Assessment Services
183 Boundary Drive
Spartanburg, South Carolina 29303

7 Winchester Court
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Dear Mr. Tillerson:

Apex Environmental Management, Inc. (Apex) is pleased to provide the results of our assessment services for the referenced property.

This report and the associated attachments summarize our evaluation of the conditions observed at the project site. The findings presented by Apex are based upon sampling performed in the subject building. There is a chance that undetected ACM may exist in the building between walls or in other areas that would only be exposed during demolition or structural renovations. Should material be discovered that could potentially contain asbestos during the demolition process, additional samples of the material should be collected by a licensed asbestos inspector and submitted to an accredited laboratory for analytical interpretation. Our recommendations are based on the guidelines presented in EPA and/or OSHA regulations.

Please note that this document is not a specification for asbestos removal. It does not contain means and methods for abatement. Quantities are estimates and contractors must verify amounts prior to bidding or removal. If you are planning an abatement project, please contact Apex to discuss the requirements. Use of this document without the express written consent of Apex is at the sole risk of the user and or/abatement contractor.

The conclusions and/or recommendations contained in this report are based on our understanding of the applicable standards at the time this report was prepared. No warranty, expressed or implied, is made. If you have any questions please feel free to contact us at (864) 404-3210.

Respectfully submitted,
APEX ENVIRONMENTAL MANAGEMENT, INC.

Stephanie Hamby
Project Manager

Tom Oliver
Vice President

Appendices

ASBESTOS AND LEAD BASED PAINT ASSESSMENT

**CITY OF SPARTANBURG
183 BOUNDARY DRIVE
SPARTANBURG, SOUTH CAROLINA 29303**

APEX PROJECT NO. 0521-99

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SECTION I

Asbestos & Lead Evaluation Report

ASBESTOS EVALUATION REPORT APEX PROJECT NUMBER: 0521-99

Date:	10/29/2021	Page Number:	1 of 4
Client:	City of Spartanburg	Client Contact:	Mr. Jeff Tillerson
Client Address:	440 South Church Street Suite B Spartanburg, SC 29306	Client Phone Number:	(864) 596-2911
Project:	Asbestos Evaluation and Lead Based Paint Assessment		
Property Address:	183 Boundary Drive Spartanburg, SC 29303		
Assessor:	Stephanie Hamby	Date of Assessment:	9/15 & 9/29/2021
Company:	Apex Environmental Management 7 Winchester Court Mauldin, SC 29662	Phone Number:	(864) 404-3210
Purpose of Assessment:	Demolition	Age of Structure:	Approximately 100 years
Building Type:	Residential	Number of Stories:	1
Foundation:	Brick pillars	Approximate Square Footage	1,400 SF

EXTERIOR BUILDING MATERIALS

- Wooden windows with glazing and caulk.
- Wooden siding.
- One layer of shingles and felt paper located on gable roof.
- Three metal doors with no caulk.
- Aluminum casing around windows has caulk.
- Tar on 2 chimneys – assumed positive to be ACM.

INTERIOR BUILDING MATERIALS

- No drywall located on walls and ceilings.
- Wood ceiling above 2'x4' wood ceiling tiles and 2'x4' pinhole ceiling tiles.
- Carpet over wood located in two front rooms.
- Unstable flooring observed in the rear of residence due to damaged floor joists.
- Multiple types & layers of vinyl flooring with & without mastics/adhesives throughout except in two front rooms.

SCOPE OF THE SURVEY

The objectives of the asbestos and lead assessment included the following:

- Identification of suspect asbestos-containing material (ACM) and lead based paints (LBP) in readily observable locations. Limited demolition of building finishes was conducted.
- Asbestos survey with sample collection by a South Carolina accredited inspector.
- Suspect ACM analysis by polarized light microscopy (PLM) utilizing EMSL Analytical, Inc. (EMSL) as an NVLAP certified laboratory, their accreditation number is 200841-0.
- Transmission electron microscopy (TEM) analysis of non-friable organically bound materials suspected to contain asbestos and testing negatively by PLM analysis.
- Lead inspection by a lead inspector certified by the Environmental Protection Agency and licensed to conduct LBP surveys in South Carolina.
- In situ analysis of suspected lead based paints by X-ray fluorescence (XRF).
- Presenting the results in a report identifying confirmed ACMs and LBPs.

METHODS

Asbestos Containing Materials

In order to determine if the suspect materials observed during the visual survey contained asbestos, representative bulk samples were collected and placed in sealed packages. Twenty-seven (27) bulk samples were collected during the survey and submitted to EMSL in Pineville, North Carolina for analysis using the EPA recommended method of Polarized Light Microscopy (PLM) coupled with dispersion staining (Method No. EPA 600/M4-82-020, Dec. 1982). EMSL participates in the National Voluntary Laboratory Accreditation Program (NVLAP). Their NVLAP accreditation number is 200841-0. EPA regulations require that multiple samples of each homogeneous material be collected for laboratory analysis. Twenty-six (26) samples were analyzed due to layering by PLM and positive stop methods. In accordance with South Carolina Regulation 61-86.1, non-friable organically bound materials that are reported to be non-asbestos containing by PLM analysis must also be analyzed by Transmission Electron Microscopy (TEM). Eleven (11) samples were analyzed using TEM.

Lead-Based Paint

Lead painted surfaces were analyzed in place using X-ray fluorescence. Painted surfaces were selected based on color of topcoat, underlying layers and substrate on which it was painted.

RESULTS

Asbestos Results

The EPA defines an asbestos-containing material (ACM) as a material containing more than 1% asbestos. OSHA defines ACM as a material containing detectable amounts of asbestos. Provided below is a general discussion of the asbestos containing materials identified in the residence. A specific *PLM and TEM Data Table* is located in Appendix II of this report and identifies positive materials and designates approximate quantities.

Damage to the rear joists of the structure was observed during the time of the assessment. The damage to the joist has led to sagging floors in the kitchen and rear room of the residence. The building was fully assessed; however, if additional ACM is discovered during demolition activities, Apex recommends that work activities stop until the suspect building materials may be sampled and analyzed.

Suspect asbestos containing materials that were identified to be asbestos containing include:

- Approximately 130 SF tan/brown marble and green roll vinyl flooring with mastic in the kitchen.
- Approximately 355 SF of two layers of yellow roll vinyl flooring in the dining room and hallway.
- Approximately 12 LF of tar on two chimneys – assumed positive.

Lead Based Paint

OSHA does not recognize a threshold level of lead for definition purposes, only the presence or absence of lead. The current OSHA regulations recognize an airborne action level of thirty micrograms per cubic meter ($30 \mu\text{g}/\text{m}^3$) during an eight-hour workday and a permissible exposure level of fifty micrograms per cubic meter ($50 \mu\text{g}/\text{m}^3$) for employees.

Currently, EPA defines LBP as paint containing in excess of, or equal to, $1.0 \text{ mg}/\text{cm}^2$. *XRF LBP Data Sheets* providing XRF results for testing combinations can be found in the Appendices at the conclusion of this report. Paint-chip sampling was not required for XRF inconclusive values.

Several surfaces in the building tested positive for lead in excess of the regulatory definition:

- White wooden siding
- White wooden exterior window casings
- Gray wooden exterior windows
- Gray wooden exterior window frame
- Silver wooden ceiling located on the front porch
- White wooden columns located on the front porch
- White wooden interior door casings
- White wooden interior door jambs
- White wooden interior doors
- White wooden interior window casings
- White wooden interior window aprons
- White wooden interior windows
- White wooden fireplace mantles
- White wooden fireplace casings

RECOMMENDATIONS AND DISCUSSION

Asbestos Containing Materials

If the above referenced asbestos materials are to be disturbed by renovations or demolition, the asbestos must be removed in accordance with EPA, State of South Carolina and OSHA asbestos regulations. South Carolina, Department of Health and Environmental Control (DHEC) has specific regulations that must be adhered to during asbestos removal/abatement projects.

APEX recommends the following:

1. Abate the asbestos containing materials in the structure prior to renovation or demolition.
2. Follow applicable asbestos regulations during renovation or demolition of the structure. You should be aware that stringent requirements are imposed upon anyone renovating or demolishing a structure in which ACM will be disturbed. This work must be performed in accordance with OSHA asbestos regulations, 29 CFR 1910 & 1926, and NESHAP asbestos regulations 40 CFR 61, subpart M. South Carolina regulations require the accreditation of personnel who work in the asbestos field and notification and permitting fees for asbestos removal projects. There is a 10 working day notification period required prior to abatement of asbestos in a facility. Failure to take proper precautions and actions to protect human health and the environment can result in penalties, danger to personnel, and construction delays.

Lead-Based Paint

Changes to state and federal regulations have changed the disposal options for LBP waste and LBP residue. LBP waste is defined as material such as wood, brick, metal, etc. that is coated with LBP. LBP residue is defined as residue that is generated from the removal (scraped, chipped, sandblasted, chemical means, etc.) of LBP from a structure. The regulations allow LBP waste from residential and commercial structures to be disposed of in Class 2 (construction and demolition debris) and Class 3 (municipal solid waste or industrial) landfills in South Carolina. The management of LBP residue is based on the source and lead concentration characterized by Toxic Characteristic Leaching Procedures (TCLP) to determine if the waste is classified as hazardous or non-hazardous. LBP residues that have TCLP sample results less than 5 milligrams per liter (mg/L) lead may be disposed of in a Class 3 landfill and is considered to be non-hazardous. LBP residues that have TCLP sample results equal to or greater than 5 mg/L lead should be disposed of in a Subtitle C landfill and is considered to be hazardous. However, the landfills should be contacted to determine their specific disposal requirements.

Occupational Safety and Health Administration Lead Regulations apply to actions initiated on lead containing materials. This regulation applies to lead concentrations greater than the analytical limit of detection. This regulation sets exposure levels on airborne lead and does not reference the percent lead in paint. Therefore, initial personal air monitoring should be conducted on workers performing work on surfaces which have a lead concentration of 0.1 mg/ cm² or above to satisfy the OSHA requirements. If a baseline exposure lower than the OSHA Action Level of 30 micrograms per cubic meter (µg/m³) is established, personal air monitoring may be terminated. The full OSHA lead standard should be referenced for compliance.

A copy of this report must be submitted to SCDHEC at least ten (10) working days prior to demolition when applying for a demolition permit.

SECTION II

Asbestos & LBP Data Tables

**ASBESTOS SURVEY FIELD DATA SHEET
PLM & TEM ANALYSIS**

Project Name: COS 183 Boundary Drive ACM-LBP

Sampled By: S. Hamby & T. Oliver

Project Location: 183 Boundary Drive, Spartanburg, South Carolina 29303

Project Manager: Tom Oliver

Project Number: 0521-99

Date: 9/15/2021

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
1	Roof	1 layer of shingles, 1 layer of felt	PLM - NAD	Non-Friable	Good	1,600 SF
2						
3			TEM - NAD			
4	Exterior windows	Glazing	PLM - NAD	Non-Friable	Good	8 EA
5						
6			TEM - NAD			
7	Exterior windows	Caulk	PLM - NAD	Non-Friable	Damaged	8 EA
8						
9			TEM - NAD			
10	Back left room ceiling	2'x4' pinhole ceiling tile	PLM - NAD	Friable	Good	40 SF
11						
12						
13	Bathroom floor and shelves	Square and diamond roll vinyl over tan roll vinyl flooring & mastic	PLM - NAD	Non-Friable	Significantly damaged	40 SF
14						
15			TEM - NAD			
16	Kitchen	Tan square pattern roll vinyl flooring with adhesive	PLM - NAD	Non-Friable	Good	130 SF
17						
18			TEM - NAD			
19	Kitchen	Tan/brown marble with green roll vinyl flooring with adhesive	PLM - 30% chry (roll vinyl floors & mastic)	Non-Friable	Good	130 SF
20						
21						

**ASBESTOS SURVEY FIELD DATA SHEET
PLM & TEM ANALYSIS**

Project Name: COS 183 Boundary Drive ACM-LBP

Sampled By: S. Hamby & T. Oliver

Project Location: 183 Boundary Drive, Spartanburg, South Carolina 29303

Project Manager: Tom Oliver

Project Number: 0521-99

Date: 9/15/2021

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
22	Dining room & hallway	Two layers of yellow roll vinyl flooring with adhesive	PLM - 30% chry (yellow roll vinyl), NAD (mastic)	Non-Friable	Good	355 SF
23						
24			TEM - NAD			
25	Exterior windows aluminum casing	Caulk (painted silver)	PLM - NAD	Non-Friable	Good	8 EA
26			TEM - NAD			
27						
Assumed	2 Chimneys	Tar on 2 Chimneys	Assumed	Non-Friable	Good	12 LF

NAD = No Asbestos Detected

LF = Linear Feet

EA = Each

Bold = Positive For Asbestos

SF = Square Feet

Chry = Chrysotile

**FIELD DATA SHEET
XRF LBP ANALYSIS**

Project Name: COS 185 Boundary Drive ACM-LBP

Sampled By: Stephanie Hamby

Project Location: 185 Boundary Drive, Spartanburg, SC 29303

Project Manager: Tom Oliver

Project Number: 0521-99

Date: 9/29/2021

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result (mg/m ³)	
69	Exterior	Siding	White	Wood	>5.00	
70		Window Shutter	Black	Wood	0.07	
71		Window Casing	White	Wood	>1.86	
72		Window	Gray	Wood	>3.46	
73		Window Frame	Gray	Wood	>1.97	
74		Front Porch Ceiling	Silver	Wood	>1.81	
75		Front Porch Floor	Gray	Wood	0.00	
76		Front Porch Column	White	Wood	>2.45	
77		Door Casing	White	Wood	0.00	
78		Door Jamb	Red	Wood	0.00	
79		Door	Red	Wood	0.00	
80		Interior	Wall (under paneling)	White	Beadboard	0.13
81			Door Casing	White	Wood	2.61
82	Door Jamb		White	Wood	1.90	
83	Door		White	Wood	2.58	
84	Window Casing		White	Wood	2.80	
85	Window Apron		White	Wood	2.09	
86	Window		White	Wood	2.75	
87	Wall		Green	Wood Paneling	0.19	
88	Door		Green	Wood	0.04	
89	Wall - Upper Partition		Tan	Wood	0.00	
90	Ceiling		White	Wood	0.00	
91	Bathroom Closet		White	Wood	0.00	
92	Door Jamb		White	Wood	0.00	
93	Bathroom Vanity		White	Wood	0.00	

**FIELD DATA SHEET
XRF LBP ANALYSIS**

Project Name: COS 185 Boundary Drive ACM-LBP

Sampled By: Stephanie Hamby

Project Location: 185 Boundary Drive, Spartanburg, SC 29303

Project Manager: Tom Oliver

Project Number: 0521-99

Date: 9/29/2021

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result (mg/m ³)
94	Interior	Fireplace Mantle	White	Wood	3.26
95		Fireplace	White	Plaster	0.02
96		Fireplace Casing	White	Wood	>4.43
97		Wall	White	Wood Paneling	0.73
98	Calibration				1.11
99	Calibration				1.22
100	Calibration				1.07

Bold = LBP

FFM = Factory Finished Metal

FFV = Factory Finished Vinyl

SECTION III

Laboratory Analytical Results & Chain of Custody



EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134
Tel/Fax: (704) 525-2205 / (704) 525-2382
<http://www.EMSL.com> / charlottelab@emsl.com

EMSL Order: 412109050
Customer ID: AXEM25
Customer PO:
Project ID:

Attention: Stephanie Hamby
Apex Environmental Management
7 Winchester Court
Mauldin, SC 29662
Phone: (864) 918-1433
Fax:
Received Date: 09/24/2021 9:50 AM
Analysis Date: 09/30/2021
Collected Date: 09/15/2021
Project: 0521-99 183 Boundary Dr.

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
1-Shingle 412109050-0001	Roof - 1 Shingle, 1 Felt	Gray/Black Fibrous Heterogeneous	<1% Cellulose 5% Glass	95% Non-fibrous (Other)	None Detected
1-Felt 412109050-0001A	Roof - 1 Shingle, 1 Felt	Black Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (Other)	None Detected
2-Shingle 412109050-0002	Roof - 1 Shingle, 1 Felt	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
2-Felt 412109050-0002A	Roof - 1 Shingle, 1 Felt	Black Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (Other)	None Detected
4 412109050-0003	Wood Windows - Glazing	Gray/Tan/Beige Non-Fibrous Heterogeneous	<1% Cellulose	10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
5 412109050-0004	Wood Windows - Glazing	Gray/Tan Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
7 412109050-0005	Wood Windows - Caulk	White Non-Fibrous Homogeneous	<1% Cellulose	5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
8 412109050-0006	Wood Windows - Caulk	White Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
10 412109050-0007	Back Left Room Ceiling - 2x4 Pinhole Ceiling Tile	Gray/White Fibrous Homogeneous	45% Cellulose 10% Glass	40% Perlite 5% Non-fibrous (Other)	None Detected
11 412109050-0008	Back Left Room Ceiling - 2x4 Pinhole Ceiling Tile	Gray/White Fibrous Homogeneous	45% Cellulose 10% Glass	40% Perlite 5% Non-fibrous (Other)	None Detected
12 412109050-0009	Back Left Room Ceiling - 2x4 Pinhole Ceiling Tile	White Fibrous Homogeneous	45% Cellulose 10% Glass	40% Perlite 5% Non-fibrous (Other)	None Detected
13-Top Layer Flooring 412109050-0010	Bathroom Floor & Shelves - Top - Square & Diamond Pattern Roll Vinyl; 2nd Layer - Tan Roll Vinyl	Gray/Beige Fibrous Heterogeneous	15% Cellulose 1% Glass	84% Non-fibrous (Other)	None Detected
13-Bottom Layer Flooring 412109050-0010A	Bathroom Floor & Shelves - Top - Square & Diamond Pattern Roll Vinyl; 2nd Layer - Tan Roll Vinyl	Gray/Tan/Yellow Non-Fibrous Heterogeneous	1% Cellulose 1% Glass	98% Non-fibrous (Other)	None Detected
13-Mastic 412109050-0010B	Bathroom Floor & Shelves - Top - Square & Diamond Pattern Roll Vinyl; 2nd Layer - Tan Roll Vinyl	Yellow/Beige Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected

Initial report from: 10/01/2021 09:14:16



EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134
Tel/Fax: (704) 525-2205 / (704) 525-2382
<http://www.EMSL.com> / charlotte@emsl.com

EMSL Order: 412109050
Customer ID: AXEM25
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
14-Flooring 412109050-0011	Bathroom Floor & Shelves - Top - Square & Diamond Pattern Roll Vinyl; 2nd Layer - Tan Roll Vinyl	Gray Fibrous Heterogeneous	15% Cellulose 3% Glass	82% Non-fibrous (Other)	None Detected
14-Mastic 412109050-0011A	Bathroom Floor & Shelves - Top - Square & Diamond Pattern Roll Vinyl; 2nd Layer - Tan Roll Vinyl	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
16-Flooring 412109050-0012	Kitchen - Tan Square Pattern Roll Vinyl Flooring w/ Adhesive	Gray/Tan/White Fibrous Heterogeneous	15% Cellulose 1% Glass	84% Non-fibrous (Other)	None Detected
16-Mastic 412109050-0012A	Kitchen - Tan Square Pattern Roll Vinyl Flooring w/ Adhesive	Yellow Non-Fibrous Homogeneous	3% Cellulose	97% Non-fibrous (Other)	None Detected
17-Flooring 412109050-0013	Kitchen - Tan Square Pattern Roll Vinyl Flooring w/ Adhesive	Tan Fibrous Heterogeneous	15% Cellulose 3% Glass	82% Non-fibrous (Other)	None Detected
17-Mastic 412109050-0013A	Kitchen - Tan Square Pattern Roll Vinyl Flooring w/ Adhesive	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
19 412109050-0014	Kitchen - 2nd Layer Tan/Brown Marble w/ Green Roll Vinyl w/ Adh.	Brown/Tan/Gold Fibrous Heterogeneous	1% Cellulose	69% Non-fibrous (Other)	30% Chrysotile
<i>Insufficient Mastic to Separate.</i>					
20 412109050-0015	Kitchen - 2nd Layer Tan/Brown Marble w/ Green Roll Vinyl w/ Adh.				Positive Stop (Not Analyzed)
<i>Insufficient Mastic to Separate.</i>					
22-Flooring 412109050-0016	Dining Room & Hallway - Yellow Roll Vinyl w/ Adhesive (2 Layers)	Brown/Green/Gold Fibrous Homogeneous	1% Cellulose	69% Non-fibrous (Other)	30% Chrysotile
22-Mastic 412109050-0016A	Dining Room & Hallway - Yellow Roll Vinyl w/ Adhesive (2 Layers)	Yellow Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
23-Flooring 412109050-0017	Dining Room & Hallway - Yellow Roll Vinyl w/ Adhesive (2 Layers)				Positive Stop (Not Analyzed)
23-Mastic 412109050-0017A	Dining Room & Hallway - Yellow Roll Vinyl w/ Adhesive (2 Layers)	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
25 412109050-0018	Aluminum Window Casings - Silver Painted Caulk	Gray/Beige Non-Fibrous Homogeneous	<1% Cellulose	10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
26 412109050-0019	Aluminum Window Casings - Silver Painted Caulk	White Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected

Initial report from: 10/01/2021 09:14:16



EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

Tel/Fax: (704) 525-2205 / (704) 525-2382

<http://www.EMSL.com> / charlottelab@emsl.com

EMSL Order: 412109050

Customer ID: AXEM25

Customer PO:

Project ID:

Analyst(s)

Philip Szabo (11)

Scott Combs (15)

Lee Plumley, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method") but augmented with procedures outlined in the 1993 ("final") version of the method. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Kenersville, NC NVLAP Lab Code 102104-0, Virginia 3333-000228, West Virginia LT000321

Initial report from: 10/01/2021 09:14:16



EMSL Analytical, Inc.

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Attention: Stephanie Hamby
Apex Environmental Management
7 Winchester Court
Mauldin, SC 29662
Phone: (864) 918-1433
Fax:
Received Date: 09/24/2021 9:50 AM
Analysis Date: 10/06/2021
Collected Date: 09/15/2021
Project: 0521-99 183 Boundary Dr.

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
3-Shingle 412109050-0020	Roof - 1 Shingle, 1 Felt	Gray Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
3-Felt 412109050-0021	Roof - 1 Shingle, 1 Felt	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
6 412109050-0022	Wood Windows - Glazing	Brown/Gray Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
9 412109050-0023	Wood Windows - Caulk	White Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
15-Top Flooring 412109050-0024	Bathroom Floor & Shelves - Top - Square & Diamond Pattern Roll Vinyl; 2nd Layer - Tan Roll Vinyl	Gray/Black/Beige Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
15-Bottom Flooring 412109050-0025	Bathroom Floor & Shelves - Top - Square & Diamond Pattern Roll Vinyl; 2nd Layer - Tan Roll Vinyl	Tan/Beige Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
15-Mastic 412109050-0026	Bathroom Floor & Shelves - Top - Square & Diamond Pattern Roll Vinyl; 2nd Layer - Tan Roll Vinyl	Yellow/Beige Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
18-Flooring 412109050-0027	Kitchen - Tan Square Pattern Roll Vinyl Flooring w/ Adhesive	Gray/Tan/Beige Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
18-Mastic 412109050-0028	Kitchen - Tan Square Pattern Roll Vinyl Flooring w/ Adhesive	Tan/Yellow/Beige Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
24-Mastic 412109050-0029	Dining Room & Hallway - Yellow Roll Vinyl w/ Adhesive (2 Layers)	Tan Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
27 412109050-0030	Aluminum Window Casings - Silver Painted Caulk	Gray/Beige Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. EMSL recommends that samples reported as none detected or <1% undergo additional analysis via PLM to avoid the possibility of false negatives.

Samples analyzed by EMSL Analytical, Inc. Kernersville, NC

Initial report from: 10/07/2021 12:48:44



EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134
Tel/Fax: (704) 525-2205 / (704) 525-2382
<http://www.EMSL.com> / charlottelab@emsl.com

EMSL Order: 412109050
Customer ID: AXEM25
Customer PO:
Project ID:


Attention: Stephanie Hamby
Apex Environmental Management
7 Winchester Court
Mauldin, SC 29662
Phone: (864) 918-1433
Fax:
Received Date: 09/24/2021 9:50 AM
Analysis Date: 10/06/2021
Collected Date: 09/15/2021
Project: 0521-99 183 Boundary Dr.

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID Description Appearance % Matrix Material % Non-Asbestos Fibers Asbestos Types

Analyst(s)

Stephen Bennett (11)



Lee Plumley, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Kernersville, NC

Initial report from: 10/07/2021 12:48:44



EMSL ANALYTICAL, INC.
LABORATORY PRODUCTS TRAINING

Asbestos Bulk Building Materials - Chain of Custody

EMSL Order Number / Lab Use Only

EMSL Analytical, Inc.

10801 Southern Loop Blvd

Pineville, NC 28134

PHONE: (704) 525-2205

EMAIL: charlottelab@EMSL.com

412109050

Customer Information		Billing Information	
Customer ID:		Billing ID:	
Company Name:	Apex Environmental Management	Company Name:	Apex Environmental Management
Contact Name:	Stephanie Hamby	Billing Contact:	Stephanie Hamby
Street Address:	7 Winchester Court	Street Address:	7 Winchester Court
City, State, Zip:	Mauldin SC 29662	City, State, Zip:	Mauldin SC
Country:	US	Country:	US
Phone:	864-918-1433	Phone:	864-918-1433
Email(s) for Report:	shamby@apex-ehs.com	Email(s) for Invoice:	

Project Information

Project Name/No:	0521-99 183 Boundary Dr	Purchase Order:	
EMSL LIMS Project ID: (if applicable, EMSL will provide)		US State where samples collected:	SC
		State of Connecticut (CT) must select project location:	<input type="checkbox"/> Commercial (Taxable) <input type="checkbox"/> Residential (Non-Taxable)
Sampled By Name:	S Hamby	Sampled By Signature:	<i>[Signature]</i>
		Date Sampled:	9-15-21
		No. of Samples in Shipment:	29

Turn-Around-Time (TAT)

3 Hour
 6 Hour
 24 Hour
 32 Hour
 48 Hour
 72 Hour
 96 Hour
 1 Week
 2 Week

Please call ahead for large projects and/or turnaround times 6 Hours or Less. *32 Hour TAT available for select tests only; samples must be submitted by 11:30am.

Test Selection

PLM - Bulk (reporting limit)

PLM EPA 600/R-93/116 (<1%)
 PLM EPA NOB (<1%)
 POINT COUNT
 400 (<0.25%) 1,000 (<0.1%)
 POINT COUNT w/ GRAVIMETRIC
 400 (<0.25%) 1,000 (<0.1%)
 NIOSH 9002 (<1%)
 NYS 198.1 (Friable - NY)
 NYS 198.6 NOB (Non-Friable - NY)
 NYS 198.8 (Vermiculite SM-V)

TEM - Bulk

TEM EPA NOB
 NYS NOB 198.4 (Non-Friable - NY)
 TEM EPA 600/R-93/116 w Milling Prep (0.1%)

Other Tests (please specify)

Positive Stop - Clearly Identified Homogeneous Areas (HA)

Sample Number	HA Number	Sample Location	Material Description
1		Roof	1 Shingle, 1 felt
2		I	I
3		I	I
4		wood windows	Glazing
5		I	I
6		I	I
7		wood windows	caulk
8		I	I
9		I	I

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

Method of Shipment:	Fedex	Sample Condition Upon Receipt:	
Reinquished by:	S. Hamby	Date/Time:	9-16-21 10A
Reinquished by:		Date/Time:	
		Received by:	FIN
		Date/Time:	9/24/21 950AM
		Received by:	Flx 2837 5140 4535
		Date/Time:	

Controlled Document - Asbestos Bulk R7 9/14/2021

AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

EMSL Analytical, Inc.'s Laboratory Terms and Conditions are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to EMSL Analytical, Inc. constitutes acceptance and acknowledgment of all terms and conditions by Customer.



EMSL ANALYTICAL, INC.
LABORATORY PRODUCTS TRAINING

Asbestos Bulk Building Materials - Chain of Custody

EMSL Order Number / Lab Use Only

EMSL Analytical, Inc.
10801 Southern Loop Blvd

Pineville, NC 28134
PHONE: (704) 525-2205
EMAIL: charlotte@EMSL.com

412109050

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

Sample Number	HA Number	Sample Location	Material Description
10		Back left Room-ceiling	2x4 Pinhole
11		┆	Ceiling Tile
12		┆	┆
13		Bathroom floor &	Top-Square & diamond
14		shelves ┆	pattern roll vinyl, 2nd
15		┆	layer - tan roll vinyl
16		Kitchen	Tan square pattern
17		┆	roll vinyl flooring w/
18		┆	adhesive
19		Kitchen	2nd layer tan/brown
20		┆	marble w/green
21		┆	roll-vinyl w/adh.
22		Dining Rm & hallway	Yellow roll vinyl
23		┆	w/adhesive (2 layers)
24		┆	┆
25		Aluminum window	Silver painted
26		easings ┆	caulk ┆
27		┆	┆

Method of Shipment: <u>Fedex</u>		Sample Condition Upon Receipt:	
Relinquished by: <u>S. Hamby</u>	Date/Time: <u>4-16-21 10A</u>	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received by:	Date/Time:

Controlled Document - Asbestos Bulk R7 09/14/2021

AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

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SECTION IV
Photographic Log



Photo 1 – 183 Boundary Drive in Spartanburg, South Carolina 29303



Photo 2 – One layer of shingle and felt



Photo 3 – Assumed asbestos containing tar on chimney.



Photo 4 – Glazing debris located in window troughs



Photo 5 – Gray caulk located around aluminum casing of windows.



Photo 6 – White caulk located on wooden windows.



Photo 7 – Two layers of yellow roll vinyl with adhesive located in dining room and hallway.



Photo 8 – Tan square roll vinyl flooring over tan/brown marble with green roll vinyl with adhesive in kitchen.



Photo 9 – Square and diamond pattern flooring over tan roll vinyl located in bathroom floor and shelves.



Photo 10 – Pinhole 2x4 ceiling tile located in back left room ceiling.



Photo 11 – Floors located in the rear of the house are sagging due to damaged floor joists.

SECTION V

SC DHEC Asbestos Inspector License

SCDHEC ISSUED

Asbestos ID Card

STEPHANIE HAMBY



AIRSAMPLER
CONSULTBI

AS-000632
BI-01894

Expiration Date:
08/05/22
01/12/22