



## **Asbestos & Lead Based Paint Assessment**

City of Spartanburg  
418 Carpenter Street  
Spartanburg, South Carolina 29301

### ***Prepared for:***

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

### ***Prepared by:***

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

Project Number: 0521-99

August 4, 2021





**Apex Project Number 0521-99**

August 4, 2021

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

Reference: Asbestos and Lead-Based Paint Assessment Services  
418 Carpenter Street  
Spartanburg, South Carolina 29301

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.**

Tom Oliver  
Vice President

Appendices

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**ASBESTOS AND LEAD BASED PAINT ASSESSMENT**

**CITY OF SPARTANBURG  
418 CARPENTER STREET  
SPARTANBURG, SOUTH CAROLINA 29301**

**APEX PROJECT NO. 0521-99**

**TABLE OF CONTENTS**

**SECTION**

- I Asbestos & Lead Evaluation Report
- II Asbestos & LBP Data Tables
- III Laboratory Analytical Results & Chain of Custody
- IV Photographic Log
- V SC DHEC Asbestos Inspector Licenses

**SECTION I**

**Asbestos & Lead Evaluation Report**

<b>ASBESTOS EVALUATION REPORT</b> <b>APEX PROJECT NUMBER: 0521-99</b>
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Date:	8/4/2021	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:	418 Carpenter Street Spartanburg, SC 29301		
Assessor:	Stephanie Hamby	Date of Assessment:	7/9/2021
Company:	Apex Environmental Management 7 Winchester Court Mauldin, SC 29662	Phone Number:	(864) 404-3210
Purpose of Assessment:	Demolition	Age of Structure:	Approximately 80 years
Building Type:	Residential	Number of Stories:	1
Foundation:	CMU Block Crawlspace	Approximate Square Footage	1,300 SF

**EXTERIOR BUILDING MATERIALS**

- Pitched wooden roof with shingles & felt.
- Vinyl siding over transite siding & felt paper with wooden siding beneath. Also exists in the back entry under wooden wall panels.
- Wooden windows with glazing.
- Wooden doors with caulk.
- 2 chimneys with tar – assumed positive for asbestos.

**INTERIOR BUILDING MATERIALS**

- 12"x12" ceiling tiles with no mastic in the kitchen.
- Drywall with joint compound walls & ceilings scattered throughout.
- Plaster with finish walls & ceilings scattered throughout. Portions exist beneath drywall.
- Wooden floors & carpet over wooden floors.
- Multiple types and layers of vinyl floors with & without mastics.
- Vinyl flooring exists under wooden floors.

## **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. Forty-three (43) 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. Fifty-six (56) 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). Twelve (12) 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.

A portion of the roof was observed to have holes and evidence of water damage and vegetation growth was identified inside the building. 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 1,400 SF of transite siding beneath the exterior vinyl siding and in the interior back entry room beneath the wooden wall panels.
- Approximately 40 SF of brown small square pattern roll vinyl flooring in the back entry room (2<sup>nd</sup> layer under wood).
- Approximately 10 SF of tan and brown square pattern roll vinyl flooring in the back left bedroom closet.
- 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 µg/m<sup>3</sup>) during an eight-hour workday and a permissible exposure level of fifty micrograms per cubic meter (50 µg/m<sup>3</sup>) for employees.

Currently, EPA defines LBP as paint containing in excess of, or equal to, 1.0 mg/cm<sup>2</sup>. *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.

One surface in the building tested positive for lead in excess of the regulatory definition:

- Exterior gray brick porch column bases.
- Exterior white wooden porch ceiling trim.
- Exterior porch ceiling header boards wrapped in white factory finished vinyl (FFV).
- Interior white brick fireplaces/hearths.
- Interior tan bead board ceilings.
- Interior cream concrete fireplaces/hearths.

## **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. The State of 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

Currently the Environmental Protection Agency (EPA) define LBP as paint containing greater than 1.0 milligrams per square centimeter (mg/cm<sup>2</sup>) lead or in excess of, or equal to, 0.5 percent lead.

Changes to South Carolina 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/ cm<sup>2</sup> or above to satisfy the OSHA requirements. If a baseline exposure lower than the OSHA Action Level of 30 micrograms per cubic meter (µg/m<sup>3</sup>) 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 418 Carpenter Street ACM-LBP

Sampled By: Stephanie Hamby

Project Location: 418 Carpenter Street, Spartanburg, South Carolina 29301

Project Manager: Tom Oliver

Project Number: 0521-99

Date: 7/9/2021

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
1	Throughout walls & ceilings	Drywall with joint compound & tape	PLM - NAD	Friable	Good	2,800 SF
2						
3						
4						
5						
6	Throughout walls & ceilings	Plaster with finish	PLM - NAD	Friable	Good	3,250 SF
7						
8						
9						
10	Kitchen & back entry (top layer)	12" x 12" stone square pattern roll vinyl floor with no adhesive	PLM - NAD	Non-Friable	Good	170 SF
11			TEM - NAD			
12						
13	Kitchen (2nd layer under wood) & back entry patch (under wood)	Tan & gray flower pattern vinyl floor & adhesive	PLM - NAD	Non-Friable	Good	135 SF
14			TEM - NAD			
15						
16	Back bathroom (4 layers)	4 layers of vinyl flooring with no adhesives	15% chrysotile	Non-Friable	Good	40 SF
17						
18						
19	Back entry (2nd layer under wood)	Brown small square pattern roll vinyl floor & mastic	PLM - 15% chry (flooring) NAD (mastic)	Non-Friable	Good	40 SF
20			TEM - NAD (mastic)			
21						
22	SAMPLE NUMBERS NOT USED					
23						
24						
25						

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

Project Name: COS 418 Carpenter Street ACM-LBP

Sampled By: Stephanie Hamby

Project Location: 418 Carpenter Street, Spartanburg, South Carolina 29301

Project Manager: Tom Oliver

Project Number: 0521-99

Date: 7/9/2021

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
26	Kitchen	12" x 12" ceiling tiles with no mastic	PLM - NAD	Friable	Good	125 SF
27						
28						
29	Wooden windows	Glazing	PLM - NAD	Non-Friable	Good	15 EA
30			TEM - NAD			
31						
32	Exterior siding & back entry room under wall panels	Transite siding	<b>20% chrysotile</b>	<b>Non-Friable</b>	<b>Good</b>	<b>1,400 SF</b>
33						
34						
35	Exterior siding & back entry room under wall panels	Felt paper under transite siding	PLM - NAD	Non-Friable	Good	1,400 SF
36			TEM - NAD			
37						
38	Roof	Roof shingles (1 layer) & felt (1 layer)	PLM - NAD	Non-Friable	Good	850 SF
39			TEM - NAD			
40						
41	Wooden doors	Caulk	PLM - NAD	Non-Friable	Good	2 EA
42			TEM - NAD			
43						
44	Back left bedroom closet	Tan & brown square pattern roll vinyl floor with no adhesive	<b>15% chrysotile</b>	<b>Non-Friable</b>	<b>Good</b>	<b>10 SF</b>
45						
46						
<b>Assumed</b>	<b>Chimney's (2 chimneys)</b>	<b>Tar on 2 chimney's</b>	<b>Assumed</b>	<b>Non-Friable</b>	<b>Good</b>	<b>12 LF</b>

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 418 Carpenter Street ACM-LBP

Sampled By: Stephanie Hamby

Project Location: 418 Carpenter Street, Spartanburg, SC 29301

Project Manager: Tom Oliver

Project Number: 0521-99

Date: 7/9/2021

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result (mg/m <sup>3</sup> )	
1		Standardization			185.00/Pass	
2		Calibration			1.11	
3		Calibration			1.12	
4		Calibration			1.14	
<b>5</b>	<b>Exterior</b>	<b>Porch column base</b>	<b>Gray</b>	<b>Brick</b>	<b>1.00</b>	
6		Porch column base	White	Wood	0.00	
7		Foundation	Gray	CMU Block	0.00	
8		Bottom porch trim	Gray	Wood	0.00	
9		Handrail	White	Wood	0.00	
10		Porch floor	Gray	Wood	0.00	
11		Siding	Gray	FFV	0.25	
12		Door casing	White	Wood	0.01	
13		Door casing	Red	Wood	0.55	
14		Porch ceiling	White	FFV	0.02	
<b>15</b>		<b>Porch ceiling trim</b>	<b>White</b>	<b>Wood</b>	<b>2.97</b>	
<b>16</b>		<b>Porch ceiling header</b>	<b>White</b>	<b>FFV</b>	<b>1.37</b>	
17		Window casing	White	Wood	0.00	
18		Siding	Cream	Wood	0.00	
19		<b>Interior</b>	Window casing	White	Wood	0.39
20			Window sill	White	Wood	0.25
21			Window	White	Wood	0.17
22			Base board	White	Wood	0.10
23	Wall		Tan	Plaster	0.56	
<b>24</b>	<b>Fireplace/hearth</b>		<b>White</b>	<b>Brick</b>	<b>1.00</b>	
25	Door casing		White	Wood	0.51	

## FIELD DATA SHEET XRF LBP ANALYSIS

Project Name: COS 418 Carpenter Street ACM-LBP

Sampled By: Stephanie Hamby

Project Location: 418 Carpenter Street, Spartanburg, SC 29301

Project Manager: Tom Oliver

Project Number: 0521-99

Date: 7/9/2021

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result (mg/m <sup>3</sup> )
26	Interior	Door	White	Wood	0.16
27		Wall panel	Tan	Wood	0.00
28		Fireplace mantle	White	Wood	0.16
29		Wall panel	Mint Green	Wood	0.00
30		Ceiling	White	Drywall	0.00
31		Wall	Purple	Drywall	0.00
<b>32</b>		<b>Ceiling</b>	<b>Tan</b>	<b>Bead board</b>	<b>3.31</b>
33		Cabinets	White	Wood	0.56
34		Wall	Brown	Plaster	0.31
35		Floor	Brown	Wood	0.00
<b>36</b>		<b>Fireplace/hearth</b>	<b>Cream</b>	<b>Concrete</b>	<b>2.10</b>
37		Closet door	White	Wood	0.00
38		Closet wall	White	Bead board	0.04
39		Closet wall	Gray	Bead board	0.00
40		Calibration			
41	Calibration				1.01
42	Calibration				1.08

**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](mailto:charlottelab@emsl.com)

EMSL Order: 412105883

Customer ID: AXEM25

Customer PO:

Project ID:

**Attention:** Tom Oliver  
Apex Environmental Management  
7 Winchester Court  
Mauldin, SC 29662

**Phone:** (864) 640-5274

**Fax:**

**Received Date:** 07/12/2021 10:59 AM

**Analysis Date:** 07/12/2021 - 07/15/2021

**Collected Date:**

**Project:** 052-99 COS 418 Carpenter Street ACM/LBP

## 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-Drywall <small>412105883-0001</small>	Drywall w/ JC & Tape	Brown/Gray Non-Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
1-Joint Compound <small>412105883-0001A</small>	Drywall w/ JC & Tape	White Non-Fibrous Homogeneous		45% Ca Carbonate 55% Non-fibrous (Other)	None Detected
1-Tape <small>412105883-0001B</small>	Drywall w/ JC & Tape	White Non-Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
2-Drywall <small>412105883-0002</small>	Drywall w/ JC & Tape	Brown/Gray Non-Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
2-Joint Compound <small>412105883-0002A</small>	Drywall w/ JC & Tape	White Non-Fibrous Homogeneous		45% Ca Carbonate 55% Non-fibrous (Other)	None Detected
2-Tape <small>412105883-0002B</small>	Drywall w/ JC & Tape	White Non-Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
3-Drywall <small>412105883-0003</small>	Drywall w/ JC & Tape	Gray Non-Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
3-Joint Compound <small>412105883-0003A</small>	Drywall w/ JC & Tape	White Non-Fibrous Homogeneous		45% Ca Carbonate 55% Non-fibrous (Other)	None Detected
3-Tape <small>412105883-0003B</small>	Drywall w/ JC & Tape	White Non-Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
4-Drywall <small>412105883-0004</small>	Drywall w/ JC & Tape	Gray Non-Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
4-Joint Compound <small>412105883-0004A</small>	Drywall w/ JC & Tape	White Non-Fibrous Homogeneous		40% Ca Carbonate 60% Non-fibrous (Other)	None Detected
4-Tape <small>412105883-0004B</small>	Drywall w/ JC & Tape	Beige Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (Other)	None Detected
5-Drywall <small>412105883-0005</small>	Drywall w/ JC & Tape	Gray Non-Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
5-Joint Compound <small>412105883-0005A</small>	Drywall w/ JC & Tape	White Non-Fibrous Homogeneous		40% Ca Carbonate 60% Non-fibrous (Other)	None Detected
5-Tape <small>412105883-0005B</small>	Drywall w/ JC & Tape	Beige Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (Other)	None Detected
6-Skim Coat <small>412105883-0006</small>	Plaster w/ Finish	White Non-Fibrous Homogeneous		25% Quartz 10% Ca Carbonate 65% Non-fibrous (Other)	None Detected

Initial report from: 07/15/2021 09:22:44



# 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](mailto:charlottelab@emsl.com)

**EMSL Order:** 412105883  
**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
6-Rough Coat <small>412105883-0006A</small>	Plaster w/ Finish	Gray/Tan Non-Fibrous Homogeneous	2% Hair	35% Quartz 63% Non-fibrous (Other)	None Detected
7-Skim Coat <small>412105883-0007</small>	Plaster w/ Finish	Gray/White Non-Fibrous Homogeneous		25% Quartz 15% Ca Carbonate 60% Non-fibrous (Other)	None Detected
7-Rough Coat <small>412105883-0007A</small>	Plaster w/ Finish	Gray/Tan Non-Fibrous Homogeneous	2% Hair	35% Quartz 63% Non-fibrous (Other)	None Detected
8-Skim Coat <small>412105883-0008</small>	Plaster w/ Finish	White Non-Fibrous Homogeneous		25% Quartz 15% Ca Carbonate 60% Non-fibrous (Other)	None Detected
8-Rough Coat <small>412105883-0008A</small>	Plaster w/ Finish	Gray/Tan Non-Fibrous Homogeneous	2% Hair	35% Quartz 63% Non-fibrous (Other)	None Detected
9-Skim Coat <small>412105883-0009</small>	Plaster w/ Finish	White Non-Fibrous Homogeneous		25% Quartz 10% Ca Carbonate 65% Non-fibrous (Other)	None Detected
9-Rough Coat <small>412105883-0009A</small>	Plaster w/ Finish	Tan Non-Fibrous Homogeneous	1% Hair	30% Quartz 69% Non-fibrous (Other)	None Detected
10-Skim Coat <small>412105883-0010</small>	Plaster w/ Finish	White Non-Fibrous Homogeneous		25% Quartz 10% Ca Carbonate 65% Non-fibrous (Other)	None Detected
10-Rough Coat <small>412105883-0010A</small>	Plaster w/ Finish	Tan Non-Fibrous Homogeneous	1% Hair	30% Quartz 69% Non-fibrous (Other)	None Detected
11 <small>412105883-0011</small>	12"x12" Stone Square Pattern Roll VF w/ No Adhesive	Gray/White Non-Fibrous Homogeneous	5% Glass	95% Non-fibrous (Other)	None Detected
12 <small>412105883-0012</small>	12"x12" Stone Square Pattern Roll VF w/ No Adhesive	Gray/White Non-Fibrous Heterogeneous	2% Glass	98% Non-fibrous (Other)	None Detected
14-Flooring <small>412105883-0013</small>	Tan & Gray Flower Pattern Roll VF & Adhesive	Gray Non-Fibrous Homogeneous	15% Cellulose 5% Glass	80% Non-fibrous (Other)	None Detected
14-Mastic <small>412105883-0013A</small>	Tan & Gray Flower Pattern Roll VF & Adhesive	Tan Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
15-Flooring <small>412105883-0014</small>	Tan & Gray Flower Pattern Roll VF & Adhesive	Gray/Beige Fibrous Heterogeneous	20% Cellulose 2% Glass	78% Non-fibrous (Other)	None Detected
15-Mastic <small>412105883-0014A</small>	Tan & Gray Flower Pattern Roll VF & Adhesive	Tan Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
17- Flooring 1 <small>412105883-0015</small>	4 Layers of Vinyl Flooring w/ & w/out Adhesives	Gray Non-Fibrous Homogeneous	5% Glass	95% Non-fibrous (Other)	None Detected
17- Flooring 2 <small>412105883-0015A</small>	4 Layers of Vinyl Flooring w/ & w/out Adhesives	Tan/White Non-Fibrous Homogeneous	5% Glass	95% Non-fibrous (Other)	None Detected
17- Flooring 3 <small>412105883-0015B</small>	4 Layers of Vinyl Flooring w/ & w/out Adhesives	Gray/White Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
17- Flooring 4 <small>412105883-0015C</small>	4 Layers of Vinyl Flooring w/ & w/out Adhesives	Gray/White Non-Fibrous Homogeneous		85% Non-fibrous (Other)	15% Chrysotile

Initial report from: 07/15/2021 09:22:44





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<http://www.EMSL.com> / [charlottelab@emsl.com](mailto:charlottelab@emsl.com)

**EMSL Order:** 412105883  
**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
18- Flooring 1 412105883-0016	4 Layers of Vinyl Flooring w/ & w/out Adhesives	Brown/Gray Non-Fibrous Heterogeneous	2% Glass	98% Non-fibrous (Other)	None Detected
18- Flooring 2 412105883-0016A	4 Layers of Vinyl Flooring w/ & w/out Adhesives	Tan/Black/Blue Non-Fibrous Heterogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
18- Flooring 3 412105883-0016B	4 Layers of Vinyl Flooring w/ & w/out Adhesives	Gray/Tan Fibrous Heterogeneous	20% Cellulose 2% Glass	78% Non-fibrous (Other)	None Detected
18- Flooring 4 412105883-0016C	4 Layers of Vinyl Flooring w/ & w/out Adhesives				Positive Stop (Not Analyzed)
20-Flooring 412105883-0017	Brown Small Square Pattern Roll VF w/ Adhesive	Tan Non-Fibrous Homogeneous		85% Non-fibrous (Other)	15% Chrysotile
20-Mastic 412105883-0017A	Brown Small Square Pattern Roll VF w/ Adhesive	Tan/White Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
21-Flooring 412105883-0018	Brown Small Square Pattern Roll VF w/ Adhesive				Positive Stop (Not Analyzed)
21-Mastic 412105883-0018A	Brown Small Square Pattern Roll VF w/ Adhesive	Beige Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
26 412105883-0019	12"x12" Ceiling Tiles w/ No Mastic	Gray/White Non-Fibrous Homogeneous	50% Cellulose 15% Min. Wool	25% Perlite 10% Non-fibrous (Other)	None Detected
27 412105883-0020	12"x12" Ceiling Tiles w/ No Mastic	Gray/White Non-Fibrous Homogeneous	50% Cellulose 15% Min. Wool	25% Perlite 10% Non-fibrous (Other)	None Detected
28 412105883-0021	12"x12" Ceiling Tiles w/ No Mastic	Gray/White Fibrous Heterogeneous	60% Cellulose 5% Min. Wool	25% Perlite 10% Non-fibrous (Other)	None Detected
29 412105883-0022	Window Glazing	Gray/White Non-Fibrous Homogeneous		25% Ca Carbonate 75% Non-fibrous (Other)	None Detected
30 412105883-0023	Window Glazing	Gray/Tan Non-Fibrous Homogeneous		20% Ca Carbonate 80% Non-fibrous (Other)	None Detected
32 412105883-0024 Sample Bag labeled 35	Transite Siding	Gray Non-Fibrous Homogeneous		80% Non-fibrous (Other)	20% Chrysotile
33 412105883-0025 Sample labeled 36	Transite Siding				Positive Stop (Not Analyzed)
34 412105883-0026	Transite Siding				Positive Stop (Not Analyzed)
35 412105883-0027 Sample labeled 32	Felt Paper Under Transite Siding	Black Non-Fibrous Homogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected
36 412105883-0028 Sample bag labeled 33.	Felt Paper Under Transite Siding	Black Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (Other)	None Detected

Initial report from: 07/15/2021 09:22:44



# 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](mailto:charlottelab@emsl.com)

**EMSL Order:** 412105883  
**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
38-Shingle <i>412105883-0029</i>	Roof Shingles (1 Layer) & Felt (1 Layer)	Black Non-Fibrous Homogeneous	10% Glass	10% Quartz 10% Ca Carbonate 70% Non-fibrous (Other)	None Detected
38-Felt <i>412105883-0029A</i>	Roof Shingles (1 Layer) & Felt (1 Layer)	Black Non-Fibrous Homogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected
39-Shingle <i>412105883-0030</i>	Roof Shingles (1 Layer) & Felt (1 Layer)	White/Black Fibrous Heterogeneous	10% Glass	15% Quartz 5% Ca Carbonate 70% Non-fibrous (Other)	None Detected
39-Felt <i>412105883-0030A</i>	Roof Shingles (1 Layer) & Felt (1 Layer)	Black Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (Other)	None Detected
41 <i>412105883-0031</i>	Door Caulk	Gray/White Non-Fibrous Homogeneous		20% Ca Carbonate 80% Non-fibrous (Other)	None Detected
42 <i>412105883-0032</i>	Door Caulk	White Non-Fibrous Homogeneous		20% Ca Carbonate 80% Non-fibrous (Other)	None Detected
44 <i>412105883-0033</i> <i>No mastic present</i>	Tan & Brown Square Pattern Roll VF w/ Adhesive	Gray Non-Fibrous Homogeneous		85% Non-fibrous (Other)	15% Chrysotile
45 <i>412105883-0034</i> <i>No mastic present</i>	Tan & Brown Square Pattern Roll VF w/ Adhesive				Positive Stop (Not Analyzed)

Analyst(s) \_\_\_\_\_  
 Brant Alyea (33)  
 Ky Nguyen (23)

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. Pineville, NC NVLAP Lab Code 200841-0, VA 3333 00312

Initial report from: 07/15/2021 09:22:44



# 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](mailto:charlottelab@emsl.com)

**EMSL Order:** 412105883

**Customer ID:** AXEM25

**Customer PO:**

**Project ID:**

**Attention:** Tom Oliver  
Apex Environmental Management  
7 Winchester Court  
Mauldin, SC 29662

**Phone:** (864) 640-5274

**Fax:**

**Received Date:** 07/12/2021 10:59 AM

**Analysis Date:** 07/21/2021

**Collected Date:**

**Project:** 052-99 COS 418 Carpenter Street ACM/LBP

## 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
13 412105883-0035	12"x12" Stone Square Pattern Roll VF w/ No Adhesive	Gray Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
16-Flooring 412105883-0036	Tan & Gray Flower Pattern Roll VF & Adhesive	Yellow Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
16-Mastic 412105883-0037	Tan & Gray Flower Pattern Roll VF & Adhesive	Tan Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
19-Flooring 1 412105883-0038	4 Layers of Vinyl Flooring w/ & w/out Adhesives	Gray Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
19-Flooring 2 412105883-0039	4 Layers of Vinyl Flooring w/ & w/out Adhesives	Tan/White Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
19-Flooring 3 412105883-0040	4 Layers of Vinyl Flooring w/ & w/out Adhesives	White Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
22-Mastic 412105883-0041	Brown Small Square Pattern Roll VF w/ Adhesive	Tan Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
31 412105883-0042	Window Glazing	White Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
37 412105883-0043	Felt Paper Under Transite Siding	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
			Sample bag labeled 34		
40-Shingle 412105883-0044	Roof Shingles (1 Layer) & Felt (1 Layer)	Gray/Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
40-Felt 412105883-0045	Roof Shingles (1 Layer) & Felt (1 Layer)	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
43 412105883-0046	Door Caulk	White Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

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Samples analyzed by EMSL Analytical, Inc. Pineville, NC

Initial report from: 07/22/2021 08:24:46



**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](mailto:charlottelab@emsl.com)

**EMSL Order:** 412105883  
**Customer ID:** AXEM25  
**Customer PO:**  
**Project ID:**

**Attention:** Tom Oliver  
Apex Environmental Management  
7 Winchester Court  
Mauldin, SC 29662  
**Phone:** (864) 640-5274  
**Fax:**  
**Received Date:** 07/12/2021 10:59 AM  
**Analysis Date:** 07/21/2021  
**Collected Date:**  
**Project:** 052-99 COS 418 Carpenter Street ACM/LBP

**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
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Analyst(s)  
Derrick Young (12)

*Lee Plumley*  
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. 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. Pineville, NC  
Initial report from: 07/22/2021 08:24:46



EMSL Order Number / Lab Use Only

Pineville, NC 28134  
PHONE: (704) 525-2205  
EMAIL:

EMSL ANALYTICAL, INC.  
LABORATORY • PRODUCTS • TRAINING

412105883

Customer Information	Customer ID:	Billing ID:
	Company Name: Apex Environmental Management, Inc.	Company Name: Apex Environmental Management, Inc.
	Contact Name: Tom Oliver	Billing Contact: Tom Oliver
	Street Address: 7 Winchester Court	Street Address: 7 Winchester Court
	City, State, Zip: Mauldin SC 29662 Country: US	City, State, Zip: Mauldin SC Country: USA
	Phone: 864-404-3210	Phone: 864-404-3210
Email(s) for Report: tolover@apex-ehs.com		Email(s) for Invoice: rshultz@apex-ehs.com

Project Information

Project Name/No: 0521-99 COS 418 Carpenter Street ACM/LBP 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:  Commercial (Taxable)  Residential (Non-Taxable)

Sampled By Name: Stephanie Hamby Sampled By Signature: *S. Hamby* No. of Samples in Shipment: 43

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.

**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)

**Test Selection**

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		Drywall w/ JC + tape	PLM
2			
3			
4			
5			
6		Plaster w/ finish	PLM
7			
8			
9			
10			

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

Method of Shipment: Fed Ex Sample Condition Upon Receipt:

Relinquished by: *[Signature]* Date/Time: 7-9-21 5:00pm Received by: *[Signature]* Date/Time: 7/12/21 9:25 AM FX

Controlled Document - Asbestos Bulk R5 03/18/2021  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.





**Asbestos Bulk Building Materials - Chain of Custody**

EMSL Order Number / Lab Use Only

EMSL Analytical, Inc.  
10801 Southern Loop Blvd

**EMSL ANALYTICAL, INC.**  
LABORATORY • PRODUCTS • TRAINING

412105883

Pineville, NC 28134  
PHONE: (704) 525-2205  
EMAIL:

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
11		12"x12" Stone square pattern	PLM
12		roll UF w/ no	I
13		adhesive	TEM
14		Tan + gray floor pattern	PLM
15		roll UF + adhesive	I
16			TEM
17		4 layers of vinyl	PLM
18		flooring w/ + w/out	I
19		adhesives	TEM
20		Brown small square	PLM
21		pattern roll UF w/	I
22		adhesive	TEM
23		Sample #'s not	
24		used	
25			
26		12"x12" ceiling tiles w/	PLM
27		no mastic	I
28			I
29		Window glazing	PLM
30			I
31			TEM
32		Transite Siding	PLM
33			I
34			I

Method of Shipment:		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received by:	Date/Time:

Controlled Document - Asbestos Bulk R5 03/18/2021

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.



**SECTION IV**  
**Photographic Log**





Photo 1 – 418 Carpenter Street in Spartanburg, South Carolina 29301



Photo 2 – Drywall with joint compound & tape walls & ceilings throughout



Photo 3 – Plaster & finish walls & ceilings throughout



Photo 4 – 12" x 12" stone square pattern roll vinyl floor with no adhesive in the kitchen & back entry (top layer)



Photo 5 – Tan & gray flower pattern vinyl floor & adhesive in the kitchen (2<sup>nd</sup> layer under wood)

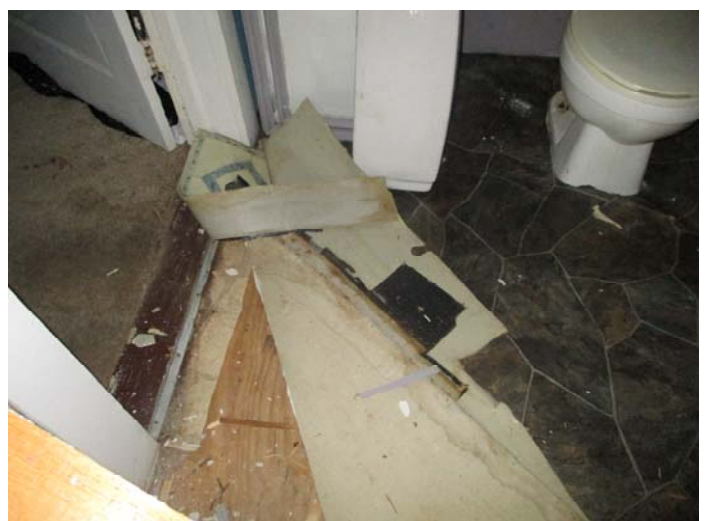


Photo 6 – 4 layers of vinyl flooring with no adhesives in the back bathroom





Photo 7 – Brown small square pattern roll vinyl floor & mastic in the back entry (2nd layer under wood)



Photo 8 – Tan & gray flower pattern vinyl floor & adhesive patch in the back entry (under wood)



Photo 9 – 12" x 12" ceiling tiles with no mastic in the kitchen



Photo 10 – Wooden windows with glazing



Photo 11 – 1 of 2 chimneys with tar – assumed positive



Photo 12 – Transite siding with felt paper beneath





Photo 13 – Roof shingles & felt



Photo 14 – Roof shingles & felt



Photo 15 – Wooden door caulk



Photo 16 – Tan & brown square pattern roll vinyl floor with no adhesive in the back left bedroom closet

**SECTION V**

**SC DHEC Asbestos Inspector Licenses**



January 8, 2021

To whom it may concern:

Due to an unforeseen printer outage the SC Department of Health and Environmental Control Asbestos Program cannot issue a Standard Asbestos License

for license number: BI-00680 sup. January 12, 2022

Please accept this correspondence as a temporary acknowledgment

of Building Inspector licensing status.

Tom Oliver. will be issued a standard license card once our systems are fully operational.

**Keep this letter with you all the time during work at the job site.**

If you have any questions, please call the Asbestos Section at 803-898-4289.

Sincerely,

A handwritten signature in black ink that reads "Jennifer Lynn Boryk".

Jennifer Lynn Boryk  
Manager, Asbestos Section  
Bureau of Air Quality



January 8, 2021

To whom it may concern:

Due to an unforeseen printer outage the SC Department of Health and Environmental Control Asbestos Program cannot issue a Standard Asbestos License

AS-000632 exp 8/13/2021  
for license number: BI-01894 exp 1/12/2022

Please accept this correspondence as a temporary acknowledgment

of Air Sampler & Building Inspector licensing status.

Stephanie Hamby will be issued a standard license card once our systems are fully operational.

**Keep this letter with you all the time during work at the job site.**

If you have any questions, please call the Asbestos Section at 803-898-4289.

Sincerely,

A handwritten signature in black ink that reads "Jennifer Lynn Boryk".

Jennifer Lynn Boryk  
Manager, Asbestos Section  
Bureau of Air Quality