



Asbestos & Lead Based Paint Assessment

City of Spartanburg
214 Westover Drive
Spartanburg, South Carolina 29306

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: 0120-17

March 26, 2020





Apex Project Number 0120-17

March 26, 2020

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

Reference: Asbestos and Lead-Based Paint Assessment Services
214 Westover Drive
Spartanburg, South Carolina 29306

SERVICES

- Indoor Air Quality
- Mold Remediation
- Asbestos & Lead
- Industrial Hygiene
- Worker Health & Safety
- Mold Consulting
- Moisture Management Plans
- Safety Assessment
- Environmental Site Assessments
- Hazard Communication

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.

Handwritten signature of Stephanie Hamby in blue ink.

Stephanie Hamby
Field Scientist

Handwritten signature of Tom Oliver in blue ink.

Tom Oliver
Vice President

Appendices

ASBESTOS AND LEAD BASED PAINT ASSESSMENT

**CITY OF SPARTANBURG
214 WESTOVER DRIVE
SPARTANBURG, SOUTH CAROLINA 29306**

APEX PROJECT NO. 0120-17

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SECTION I

Asbestos & Lead Evaluation Report

ASBESTOS EVALUATION REPORT APEX PROJECT NUMBER: 0120-17
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Date:	3/26/2020	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:	214 Westover Drive Spartanburg, SC 29306		
Assessor:	Tom Oliver	Date of Assessment:	3/4/2020
Company:	Apex Environmental Management 7 Winchester Court Mauldin, SC 29662	Phone Number:	(864) 404-3210
Purpose of Assessment:	Demolition	Age of Structure:	Approximately 60 years
Building Type:	Residential	Number of Stories:	1
Foundation:	Brick Crawlspace	Approximate Square Footage:	850 SF

EXTERIOR BUILDING MATERIALS

- Pitched wood roof with shingles and felt paper.
- Brick walls.
- Wood windows with glazing.
- Metal windows with no glazing.
- Metal and wood framed windows and doors with caulk on the frames.
- Chimney with tar – assumed positive.

INTERIOR BUILDING MATERIALS

- Swirl ceiling texture on drywall ceiling.
- Plaster with finish ceiling exist above.
- Unfinished drywall walls.
- Second layer of unfinished drywall exists beneath.
- Carpet over wood floors.
- Multiple types and layers of vinyl flooring with & without mastics and adhesives.
- Interior portions of the ceilings are collapsed.
- Portions of the floors are collapsing and are unstable.

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. Thirty (30) 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. Forty-six (46) 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). Thirteen (13) 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. It should be noted that materials were identified to contain less than 1% asbestos and OSHA Construction Industry Asbestos Standards (29 CFR 1926.1101) will apply if those materials are disturbed during renovation or demolition activities. 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.

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

- Approximately 12 exterior wooden and metal window and door frames with caulk.
- Approximately 35 SF of 9"x9" gray flooring tile located in the bathroom's third layer.
- Approximately 140 SF of thin green flooring tile in the kitchen's second layer.
- Approximately 6 LF of tar from 1 chimney (Assumed).

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/m³) during an eight-hour workday and a permissible exposure level of fifty micrograms per cubic meter (50 µg/m³) for employees.

Currently, EPA defines LBP as paint containing in excess of, or equal to, 1.0 mg/cm². *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:

Exterior:

- Red wooden doors.
- White wooden door casings.
- White wooden windows.
- White wooden window casings.
- White wooden roof overhang.

Interior:

- Red wooden doors.
- Tan vinyl mini-blinds.

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/cm²) lead or in excess of, or equal to, 0.5 percent lead in paint chips.

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

Project Name: COS 214 Westover Drive NIP ACM-LBP

Sampled By: Tom Oliver

Project Location: 214 Westover Drive, Spartanburg, SC 29306

Project Manager: Tom Oliver

Project Number: 0120-17

Date: 3/4/2020

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
1	Roof	Roofing (4 shingles, 1 felt)	PLM - NAD	Non Friable	Good	1,200 SF
2			TEM - NAD			
3			TEM - NAD			
4	Exterior wooden windows	Wooden window glazing	PLM - NAD	Non Friable	Good	8 EA
5			TEM - NAD			
6			TEM - NAD			
7	Exterior wood and metal windows and doors	Caulk on framed doors and windows	PLM - 2% Chrysotile	Non Friable	Good	12 EA
8						
9						
10	Throughout ceilings	Swirl ceiling texture over unfinished drywall and plaster with finish	PLM - NAD	Friable	Good	850 SF
11						
12						
13	Throughout walls	Unfinished drywall (first layer)	PLM - NAD	Friable	Good	1,300 SF
14						
15						
16	Throughout wall perimeter	Unfinished drywall (second layer)	PLM - NAD	Friable	Good	1,150 SF
17						
18						
19	Hallway - single layer; bathroom - top layer, kitchen - top layer	12"x12" wooden star pattern, self stick flooring tile with adhesive	PLM - NAD	Non Friable	Good	205 SF
20			TEM - NAD			
21			TEM - NAD			
22	Bathroom - second layer	Tan rock fissure pattern with no mastic	PLM - NAD	Non Friable	Good	35 SF
23			TEM - NAD			
24			TEM - NAD			

ASBESTOS SURVEY FIELD DATA SHEET

Project Name: COS 214 Westover Drive NIP ACM-LBP

Sampled By: Tom Oliver

Project Location: 214 Westover Drive, Spartanburg, SC 29306

Project Manager: Tom Oliver

Project Number: 0120-17

Date: 3/4/2020

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
25	Bathroom - third layer	9"x9" gray flooring tile and mastic	PLM - 8% Chrysotile (tile)	Non Friable	Good	35 SF
26			NAD (gray & brown mastic)			
27			TEM - 0.82% Chry (brown mastic) NAD (gray mastic)			
28	Kitchen - second layer	Thin green flooring tile and mastic	PLM - 4% Chrysotile (tile)	Non Friable	Good	140 SF
29			NAD (bottom & top mastic)			
30			TEM - 0.65% Chry (top mastic) 0.37% Chry (bottom mastic)			
Assumed	Chimney	Chimney tar	Assumed	Non-friable	Good	6 LF

NAD = No Asbestos Detected

Bold = Positive For Asbestos

LF = Linear Feet

SF = Square Feet

EA = Each

Chry = Chrysotile

**FIELD DATA SHEET
XRF LBP ANALYSIS**

Project Name: COS 214 Westover Drive NIP ACM-LBP

Sampled By: Tom Oliver

Project Location: 214 Westover Drive, Spartanburg, SC 29306

Project Manager: Tom Oliver

Project Number: 0120-17

Date: 3/4/2020

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result (mg/m ³)
1		Standardization			184.00
2		Calibration			1.24
3		Calibration			1.22
4		Calibration			1.12
5	Exterior	Door	Red	Wood	3.66
6	Exterior	Door casing	White	Wood	1.56
7	Exterior	Window	White	Wood	1.08
8	Exterior	Window casing	White	Wood	1.26
9	Exterior	Front porch floor	Red	Wood	0
10	Exterior	Front porch floor	Gray	Concrete	0.03
11	Exterior	Front porch handrail	Red	Wood	0
12	Exterior	Front porch handrail	Green	Metal	0.75
13	Exterior	Wall/Window	White	Brick	0.02
14	Exterior	Roof overhang	White	Wood	1.46
15	Exterior	Fascia	White	Wood	0.38
16	Exterior	Wall	Red	Brick	0
17	Interior	Door	Red	Wood	1.02
18	Interior	Door	White	Wood	0.03
19	Interior	Door casing	White	Wood	0.02
20	Interior	Door casing	Brown	Wood	0.02
21	Interior	Wall	White	Drywall	0
22	Interior	Ceilings	White	Drywall/Plaster	0
23	Interior	Baseboard	White	Wood	0.04
24	Interior	Floor	Brown	Wood	0
25	Interior	Mini-blinds	Tan	Vinyl	1.07

**FIELD DATA SHEET
XRF LBP ANALYSIS**

Project Name: COS 214 Westover Drive NIP ACM-LBP

Sampled By: Tom Oliver

Project Location: 214 Westover Drive, Spartanburg, SC 29306

Project Manager: Tom Oliver

Project Number: 0120-17

Date: 3/4/2020

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result (mg/m³)
26	Interior	Window	Brown	Wood	0.04
27	Interior	Window casing	Brown	Wood	0.01
28	Interior	Cabinet	Brown	Wood	0.00
29	Interior	Crown molding	Brown	Wood	0.00
30		Calibration			1.11
31		Calibration			1.11
32		Calibration			1.10

Bold = LBP

SECTION III

Laboratory Analytical Results



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: 412002374

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: 03/05/2020 9:05 AM

Analysis Date: 03/11/2020

Collected Date: 03/04/2020

Project: 0120-17 COS 214 Westover Drive 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-Shingle 1 <small>412002374-0001</small>	Roof Shingles & Felt Paper	Black Non-Fibrous Homogeneous	8% Glass	10% Quartz 10% Ca Carbonate 72% Non-fibrous (Other)	None Detected
1-Shingle 2 <small>412002374-0001A</small>	Roof Shingles & Felt Paper	Gray/Black Fibrous Homogeneous	10% Cellulose	10% Quartz 10% Ca Carbonate 70% Non-fibrous (Other)	None Detected
1-Shingle 3 <small>412002374-0001B</small>	Roof Shingles & Felt Paper	Gray/Black Non-Fibrous Homogeneous	10% Cellulose	8% Quartz 10% Ca Carbonate 72% Non-fibrous (Other)	None Detected
1-Shingle 4 <small>412002374-0001C</small>	Roof Shingles & Felt Paper	Gray/Black Non-Fibrous Homogeneous	8% Glass	10% Quartz 10% Ca Carbonate 72% Non-fibrous (Other)	None Detected
1-Felt <small>412002374-0001D</small>	Roof Shingles & Felt Paper	Black Non-Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
2-Shingle 1 <small>412002374-0002</small>	Roof Shingles & Felt Paper	Black Fibrous Homogeneous	5% Glass	5% Quartz 20% Ca Carbonate 70% Non-fibrous (Other)	None Detected
2-Shingle 2 <small>412002374-0002A</small>	Roof Shingles & Felt Paper	Gray/Black Fibrous Homogeneous	10% Cellulose	5% Quartz 20% Ca Carbonate 65% Non-fibrous (Other)	None Detected
2-Shingle 3 <small>412002374-0002B</small>	Roof Shingles & Felt Paper	Gray/Black Fibrous Homogeneous	20% Cellulose	5% Quartz 10% Ca Carbonate 65% Non-fibrous (Other)	None Detected
2-Shingle 4 <small>412002374-0002C</small>	Roof Shingles & Felt Paper	Gray/Black Fibrous Homogeneous	5% Glass	5% Quartz 20% Ca Carbonate 70% Non-fibrous (Other)	None Detected
2-Felt <small>412002374-0002D</small>	Roof Shingles & Felt Paper	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
4 <small>412002374-0003</small>	Wooden Window Glazing	Gray Non-Fibrous Homogeneous		25% Ca Carbonate 75% Non-fibrous (Other)	None Detected
5 <small>412002374-0004</small>	Wooden Window Glazing	Gray Non-Fibrous Homogeneous		20% Ca Carbonate 80% Non-fibrous (Other)	None Detected
7 <small>412002374-0005</small>	Caulk on Wooden & Metal Framed Windows & Doors	Gray Non-Fibrous Homogeneous		25% Ca Carbonate 73% Non-fibrous (Other)	2% Chrysotile
8 <small>412002374-0006</small>	Caulk on Wooden & Metal Framed Windows & Doors				Positive Stop (Not Analyzed)
10-Texture <small>412002374-0007</small>	Swirl Ceiling Texture over Drywall & Plaster w/ Finish	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
10-Skim Coat <small>412002374-0007A</small>	Swirl Ceiling Texture over Drywall & Plaster w/ Finish	White Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected

Initial report from: 03/12/2020 08:33:01



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: 412002374
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
10-Rough Coat 412002374-0007B	Swirl Ceiling Texture over Drywall & Plaster w/ Finish	Gray Non-Fibrous Homogeneous	2% Cellulose	25% Quartz 5% Ca Carbonate 68% Non-fibrous (Other)	None Detected
10-Drywall 412002374-0007C	Swirl Ceiling Texture over Drywall & Plaster w/ Finish	Gray Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
11-Texture 412002374-0008	Swirl Ceiling Texture over Drywall & Plaster w/ Finish	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
11-Skim Coat 412002374-0008A	Swirl Ceiling Texture over Drywall & Plaster w/ Finish	White Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
11-Rough Coat 412002374-0008B	Swirl Ceiling Texture over Drywall & Plaster w/ Finish	Gray Non-Fibrous Homogeneous	2% Cellulose	20% Quartz 10% Ca Carbonate 68% Non-fibrous (Other)	None Detected
11-Drywall 412002374-0008C	Swirl Ceiling Texture over Drywall & Plaster w/ Finish	Gray Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
12-Texture 412002374-0009	Swirl Ceiling Texture over Drywall & Plaster w/ Finish	White Non-Fibrous Homogeneous		20% Ca Carbonate 80% Non-fibrous (Other)	None Detected
12-Skim Coat 412002374-0009A	Swirl Ceiling Texture over Drywall & Plaster w/ Finish	White Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
12-Rough Coat 412002374-0009B	Swirl Ceiling Texture over Drywall & Plaster w/ Finish	Gray Non-Fibrous Homogeneous	1% Cellulose	25% Quartz 5% Ca Carbonate 69% Non-fibrous (Other)	None Detected
12-Drywall 412002374-0009C	Swirl Ceiling Texture over Drywall & Plaster w/ Finish	Brown/Gray Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
13 412002374-0010	Unfinished Drywall Walls	Gray Fibrous Homogeneous	4% Cellulose	96% Non-fibrous (Other)	None Detected
14 412002374-0011	Unfinished Drywall Walls	Gray Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
15 412002374-0012	Unfinished Drywall Walls	Brown/Gray Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
16 412002374-0013	Unfinished Drywall Walls	Gray Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
17 412002374-0014	Unfinished Drywall Walls	Gray Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
18 412002374-0015	Unfinished Drywall Walls	Brown Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
19-Floor Tile 412002374-0016	12"x12" Wooden Star Pattern Self-Stick Floor Tile & Adhesive	Brown Non-Fibrous Homogeneous		30% Ca Carbonate 70% Non-fibrous (Other)	None Detected
19-Mastic 412002374-0016A	12"x12" Wooden Star Pattern Self-Stick Floor Tile & Adhesive	Clear Non-Fibrous Homogeneous	4% Cellulose	96% Non-fibrous (Other)	None Detected
20-Floor Tile 412002374-0017	12"x12" Wooden Star Pattern Self-Stick Floor Tile & Adhesive	Brown/Tan Non-Fibrous Homogeneous		40% Ca Carbonate 60% Non-fibrous (Other)	None Detected

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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
20-Mastic <i>412002374-0017A</i>	12"x12" Wooden Star Pattern Self-Stick Floor Tile & Adhesive	Tan Non-Fibrous Homogeneous	2% Cellulose	5% Ca Carbonate 93% Non-fibrous (Other)	None Detected
22-Flooring <i>412002374-0018</i> <i>No mastic present</i>	Tan Rock Fissure Pattern Vinly Floor & Adhesive	Tan Non-Fibrous Homogeneous	20% Cellulose	80% Non-fibrous (Other)	None Detected
23-Flooring <i>412002374-0019</i> <i>No mastic present</i>	Tan Rock Fissure Pattern Vinly Floor & Adhesive	Tan Fibrous Homogeneous	30% Cellulose	70% Non-fibrous (Other)	None Detected
25-Floor Tile <i>412002374-0020</i>	9"x9" Gray Floor Tile & Mastic	Tan Non-Fibrous Homogeneous		30% Ca Carbonate 62% Non-fibrous (Other)	8% Chrysotile
25-Brown Mastic <i>412002374-0020A</i>	9"x9" Gray Floor Tile & Mastic	Brown Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
25-Gray Mastic <i>412002374-0020B</i>	9"x9" Gray Floor Tile & Mastic	Gray Non-Fibrous Homogeneous	2% Cellulose	10% Ca Carbonate 88% Non-fibrous (Other)	None Detected
26-Floor Tile <i>412002374-0021</i>	9"x9" Gray Floor Tile & Mastic				Positive Stop (Not Analyzed)
26-Mastic <i>412002374-0021A</i>	9"x9" Gray Floor Tile & Mastic	Brown/Gray Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
28-Top Mastic <i>412002374-0022</i>	Green Thin Floor Tile & Mastic	Clear Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
28-Floor Tile <i>412002374-0022A</i>	Green Thin Floor Tile & Mastic	Brown Non-Fibrous Homogeneous		30% Ca Carbonate 66% Non-fibrous (Other)	4% Chrysotile
28-Bottom Mastic <i>412002374-0022B</i>	Green Thin Floor Tile & Mastic	Brown Non-Fibrous Homogeneous	1% Cellulose <1% Synthetic	99% Non-fibrous (Other)	None Detected
29-Top Mastic <i>412002374-0023</i>	Green Thin Floor Tile & Mastic	Clear Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
29-Floor Tile <i>412002374-0023A</i>	Green Thin Floor Tile & Mastic				Positive Stop (Not Analyzed)
29-Bottom Mastic <i>412002374-0023B</i>	Green Thin Floor Tile & Mastic	Brown Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected

Initial report from: 03/12/2020 08:33:01



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

EMSL Order: 412002374

Customer ID: AXEM25

Customer PO:

Project ID:

Analyst(s)

Katherine Sluder (18)

Lacy Searcy (28)

Lee Plumley, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. 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 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. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. 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. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. 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: 03/12/2020 08:33:01



EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

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

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EMSL Order: 412002374

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: 03/05/2020 9:05 AM

Analysis Date: 03/18/2020

Collected Date: 03/04/2020

Project: 0120-17 COS 214 Westover Drive 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
3-Shingle 1 412002374-0024	Roof Shingles & Felt Paper	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
3-Shingle 2 412002374-0025	Roof Shingles & Felt Paper	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
3-Shingle 3 412002374-0026	Roof Shingles & Felt Paper	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
3-Shingle 4 412002374-0027	Roof Shingles & Felt Paper	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
3-Felt 412002374-0028	Roof Shingles & Felt Paper	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
6 412002374-0029	Wooden Window Glazing	Gray Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
21-Floor Tile 412002374-0030	12"x12" Wooden Star Pattern Self-Stick Floor Tile & Adhesive	Brown Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
21-Mastic 412002374-0031	12"x12" Wooden Star Pattern Self-Stick Floor Tile & Adhesive	Tan Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
24-Flooring 412002374-0032	Tan Rock Fissure Pattern Vinly Floor & Adhesive	Brown Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
27-Brown Mastic 412002374-0033	9"x9" Gray Floor Tile & Mastic	Brown Non-Fibrous Homogeneous	99.18 Other	None	0.82% Chrysotile
27-Gray Mastic 412002374-0034	9"x9" Gray Floor Tile & Mastic	Gray Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
30-Top Mastic 412002374-0035	Green Thin Floor Tile & Mastic	Clear Non-Fibrous Homogeneous	99.35 Other	None	0.65% Chrysotile

This laboratory is not responsible for % asbestos in total sample when the residue only is submitted for analysis. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by EMSL Analytical, Inc. Pineville, NC

Initial report from: 03/19/2020 07:22:07



EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

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

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EMSL Order: 412002374
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: 03/05/2020 9:05 AM Analysis Date: 03/18/2020 Collected Date: 03/04/2020
Project: 0120-17 COS 214 Westover Drive 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
30-Bottom Mastic 412002374-0036	Green Thin Floor Tile & Mastic	Brown Non-Fibrous Homogeneous	99.63 Other	None	0.37% Chrysotile

Analyst(s)

Derrick Young (13)

Lee Plumley, Laboratory Manager
or other approved signatory

This laboratory is not responsible for % asbestos in total sample when the residue only is submitted for analysis. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by EMSL Analytical, Inc. Pineville, NC

Initial report from: 03/19/2020 07:22:07



EMSL ANALYTICAL, INC.
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Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(lab use only):*

412002374

Pineville, NC 28134
(704) 525-2205
(704) 525-2382

Company Name : Apex Environmental Management, Inc.		EMSL Customer ID:	
Street: 7 Winchester Court		City: Mauldin	State or Province: SC
Zip/Postal Code: 29662	Country: US	Telephone #: 864-404-3210	Fax #: 864-404-3213
Report To (Name): Tom Oliver		Please Provide Results via: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
email Address: tolover@apex-ehs.com		Purchase Order Number:	
Client Project ID: 0120-17 COS 214 Westover Drive ACM/LBP		EMSL Project ID <i>(internal use only):</i>	
State or Province Collected: SC		CT only <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	
EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different - <i>If bill to is different note instructions in comment. Third party billing requires written authorization from third party</i>			
Turnaround Time (TAT) Options Please Check			
<input type="checkbox"/> 3 Hour	<input type="checkbox"/> 6 Hour	<input type="checkbox"/> 24 Hour	<input type="checkbox"/> 32 Hour* <input type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input checked="" type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week
* 32 Hour TAT available for select tests only; samples must be submitted by 11:30am. Please call ahead for large projects and/or turnaround times 6 hours or less.			
PLM - Bulk (reporting limit)		TEM - Bulk	
<input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (<1%)		<input checked="" type="checkbox"/> TEM EPA NOB - EPA 600/R-93/116 Section 2.5.5.1	
<input type="checkbox"/> PLM EPA NOB (<1%)		<input type="checkbox"/> NY ELAP Method 198.4 non-friable - NY	
Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%)		<input type="checkbox"/> Chatfield Protocol (semi-quantitative)	
Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%)		<input type="checkbox"/> TEM % by Mass - EPA 600/R-93/116 Section 2.5.5.2	
<input type="checkbox"/> NIOSH 9002 (<1%)		<input type="checkbox"/> TEM Qualitative via Filtration Prep Technique	
<input type="checkbox"/> NY ELAP Method 198.1- friable - NY		<input type="checkbox"/> TEM Qualitative via Drop Mount Prep Technique	
<input type="checkbox"/> NY ELAP Method 198.6 NOB- non-friable - NY		Other tests (please specify)	
<input type="checkbox"/> NY ELAP Method 198.8- Vermiculite Surfacing Material		<input type="checkbox"/>	
<input type="checkbox"/> OSHA ID-191 Modified			
<input type="checkbox"/> EMSL Standard Addition Method			
<input checked="" type="checkbox"/> Positive Stop - Clearly Identify Homogenous Areas (HA)		Date Sampled: 3-4-2020	
Sampler's Name: Tom Oliver		Sampler's Signature:	
Sample #	HA #	Sample Location	Material Description
1		Roof shingles (4 layers) & felt	PLM
2		paper (1 layer)	PLM
3			TEM
4		Wooden window glazing	PLM
5			PLM
6			TEM
Client Sample # (s): 1-30		Total # of Samples: 30	
Relinquished by (Client):		Date: 3-4-2020	Time: 3:00 PM
Received by (Lab):		Date: 3/5/20	Time: 9:05 AM Fk
Comments/Special Instructions: Positive stop on analysis.		7958 3567 4817	



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Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (lab use only):

412002374

EMSL Analytical, Inc.
10801 Southern Loop Blvd

Pineville, NC 28134
(704) 525-2205
(704) 525-2382

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

Sample #	HA #	Sample Location	Material Description
7		Caulk on wooden & metal framed	PLM
8		windows & doors	I
9			TEM
10		Swirl ceiling texture over drywall	PLM
11		& plaster w/ finish	I
12			I
13		Unfinished drywall walls	PLM
14		to (1 st layer)	I
15			I
16		Unfinished drywall walls	PLM
17		(2 nd layer)	I
18			I
19		12" x 12" wooden star pattern	PLM
20		Self-stick floor tile	I
21		adhesive	TEM
22		Tan rock fissure pattern	PLM
23		vinyl floor & adhesive	I
24			TEM
25		9" x 9" gray floor tile &	PLM
26		mastic	I
27			TEM

***Comments/Special Instructions:**
Positive stop on analysis.

Page 2 of 3 pages

SECTION IV
Photographic Log



Photo 1 – 214 Westover Drive in Spartanburg, South Carolina.



Photo 2 – One layer of black felt under four layers of shingles.



Photo 3 – Tar on chimney is assumed to be asbestos containing material.



Photo 4 – Wooden windows with glazing.



Photo 5 – Caulk located on exterior wood window frame.



Photo 6 – Caulk located on exterior metal door frame.



Photo 7 – 12"x12" wood star pattern self-stick flooring tile with adhesive located in hallway, top layer in bathroom and top layer in kitchen.



Photo 8 – Second layer of flooring in the bathroom is a tan rock fissure pattern with no mastic.



Photo 9 – Third layer of flooring in the bathroom is a 9"x9" gray tile and mastic.



Photo 10 – Second layer of flooring in the kitchen is a thin tan/green tile and mastic.



Photo 11 – Swirl ceiling texture over drywall and plaster with finish. Collapsed ceiling in areas of structure.



Photo 12 – Two layers of unfinished drywall walls throughout the structure.

*Asbestos Containing Materials Assessment
214 Westover Drive
Spartanburg, South Carolina 29306*



Photo 13 – Hallway with floor return that may be unstable.

SECTION V

SC DHEC Asbestos Inspector License

SCDHEC ISSUED

Asbestos ID Card

Thomas H Oliver



AIRSAMPLER AS-00202
CONSULTBI BI-00680

Expiration Date:
05/08/20
01/14/21

This card is nontransferable and is considered invalid if loaned or given to another person for identification. This card will also be invalid if altered or defaced. This card is property of SCDHEC. It must be returned to the department if the holder's accreditation is revoked or if this card is invalidated. Any person performing regulated asbestos activities without current accreditation shall be subject to legal sanction. This card must be returned upon expiration and/or issuance of a new card.

YOU MUST HAVE THIS IDENTIFICATION CARD WITH YOU ON THE JOB.

For information of corrections contact: SCDHEC – Asbestos Section
2600 Bull Street
Columbia, SC 29201
(803) 898-4289