



Asbestos & Lead Based Paint Assessment

City of Spartanburg
328 Brown Avenue
Spartanburg, South Carolina

Prepared for:

The City of Spartanburg
440 South Church St., Suite B
Spartanburg, SC 29306-5234

Prepared by:

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

Project Number: 0815-163

October 4, 2016





Apex Project Number 0815-163

October 4, 2016

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Mr. Lynn Coggins
City of Spartanburg
440 South Church Street, Suite B
Spartanburg, SC 29306-5234

Reference: Asbestos and Lead-Based Paint Assessment Services
328 Brown Avenue
Spartanburg, South Carolina

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. Coggins:

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.

A handwritten signature in blue ink, appearing to read 'Tom Oliver', is written over a horizontal line.

Tom Oliver
Director of Operations

Appendices

ASBESTOS AND LEAD BASED PAINT ASSESSMENT

**CITY OF SPARTANBURG
328 BROWN AVENUE
SPARTANBURG, SOUTH CAROLINA**

APEX PROJECT NO. 0815-163

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SECTION I

Asbestos & Lead Evaluation Report

ASBESTOS/LEAD EVALUATION REPORT APEX PROJECT NUMBER: 0815-163
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Date:	10/4/2016	Page Number:	1 of 4
Client:	City of Spartanburg	Client Contact:	Mr. Lynn Coggins
Client Address:	440 South Church St., Suite B Spartanburg, SC 29306-5234	Client Phone Number:	(864) 596-2914
Project:	Asbestos and Lead Evaluation		
Property Address:	328 Brown Avenue Spartanburg, SC		
Assessor:	Ted Shultz	Date of Assessment:	7/26/2016
Company:	Apex Environmental Management 7 Winchester Court Mauldin, SC 29662	Phone Number:	
Purpose of Assessment:	Demolition	Age of Structure:	Approx. 65 years
Building Type:	Residential	Number of Stories:	1
Foundation:	Block and brick crawlspace	Approximate Square Footage:	1,625 SF

EXTERIOR BUILDING MATERIALS

- Pitched wooden roof with shingles & no felt.
- Asphalt siding over wooden siding.
- Wooden windows with glazing.
- One chimney with tar/mastic assumed positive.

INTERIOR BUILDING MATERIALS

- Wooden floors.
- Wooden wall panels.
- Plaster walls & ceilings with finish.
- Drywall & joint compound.
- Multiple types of vinyl flooring with mastic and without mastics.

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-six (26) bulk samples were collected during the survey and submitted to EMSL in Charlotte, 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. 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). Ten (10) 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 Containing Materials

The EPA defines an asbestos-containing material (ACM) as a material containing more than 1% asbestos. OSHA defines ACM as a material containing any amount of asbestos. Materials were analyzed to contain less than 1% asbestos and it should be noted that OSHA asbestos regulations will apply. Provided below is a general discussion of the asbestos containing materials identified in the residence. The *Asbestos PLM & TEM Data Table* is provided in Appendix II.

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

- Approximately 500 SF of drywall with joint compound in the pantry & living room.
- Approximately 4,500 SF of exterior asphalt siding.
- Approximately 6 LF of chimney tar/mastic – 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 ($30 \mu\text{g}/\text{m}^3$) 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, SCDHEC defines LBP as paint containing in excess of, or equal to, $1.0 \text{ mg}/\text{cm}^2$. The laboratory analytical results and chain-of-custody are included in the Lead Analysis Reports in Appendix A. The approximate locations of the paint samples collected and analytical results are presented in the Tables included with this report .

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

- Exterior white wooden door frames.
- Exterior white wooden porch columns.
- Exterior white wooden porch ceiling.
- Exterior white wooden window casings.
- Exterior white wooden siding.
- Exterior white wooden porch trim and headers.
- Exterior white wooden trim, soffit & fascia on house.
- Interior tan bead board walls.
- Interior blue wooden door frames, walls & ceilings.
- Interior white wooden walls.
- Interior white wooden cabinets.

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 South Carolina Department of Health and Environmental Control (SCDHEC) define LBP as paint containing greater than 1.0 milligrams per square centimeter (mg/cm^2) lead or in excess of, or equal to, 0.5 percent lead. Building materials identified as being painted with LBP should be segregated from the other building materials and recycled or disposed of in a municipal lined landfill. The removed wastes would need to be containerized and further tested by Toxic Characteristic Leaching procedures (TCLP) to determine if the waste is classified as hazardous. The remaining building materials that are not painted with LBP may be disposed of in a construction and demolition landfill. 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 $0.1 \text{ mg}/\text{cm}^2$ or above to satisfy the OSHA requirements. If a baseline exposure lower than the OSHA Action Level of 30 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) 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 328 Brown Avenue ACM/LBP

Sampled By: Ted Shultz

Project Location: 328 Brown Avenue Spartanburg SC

Project Manager: Ted Shultz

Project Number: 0815-163

Date: 7/26/2016

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
1	Roof	Roof shingles (6 layers) with no felt	PLM - NAD	Non-Friable	Good	2,000 SF
2			TEM - NAD			
3						
4	Exterior windows	Window glazing	PLM - NAD	Non-Friable	Damaged	14 EA
5			TEM - <0.1%			
6						
7	Exterior siding	Asphalt siding	PLM- 4% chrysotile	Non-Friable	Good	4,500 SF
8						
9						
10	Pantry & living room	Drywall with joint compound & no tape	PLM - 2% chrysotile	Friable	Good	500 SF
11						
12						
13	Throughout interior	Plaster walls & ceilings with finish	PLM - NAD	Friable	Good	4,800 SF
14						
15						
16						
17						
18	Kitchen	12" x 12" tan self-stick vinyl floor tile	PLM - NAD	Non-Friable	Good	160 SF
19			TEM - NAD			
20						
21	Pantry	Red roll vinyl flooring with no mastic	PLM - NAD	Non-Friable	Good	100 SF
22			TEM - NAD			
23						
24	Bathroom	12" x 12" gray self-stick vinyl floor tile	PLM - NAD	Non-Friable	Good	60 SF
25			TEM - NAD			
26						
Assumed	Chimney	Chimney mastic on 1 chimney	Assumed	Non-Friable	Good	6 LF

NAD = No Asbestos Detected

LF = Linear Feet

EA = Each

Amos = Amosite

Bold = Positive For Asbestos

SF = Square Feet

Chry = Chrysotile

**FIELD DATA SHEET
LBP ANALYSIS**

Project Name: COS 328 Brown Avenue ACM/LBP

Sampled By: Tom Oliver

Project Location: 328 Brown Avenue, Spartanburg SC

Project Manager: Ted Shultz

Project Number: 0815-163

Date: 10/3/2016

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result (mg/cm ²)
1	N/A	Resolution	N/A	N/A	185.00
2		Calibration			1.21
3					1.03
4					1.07
5	Exterior	Door frame	White	Wood	5.00
6	Exterior	Door	brown	Wood	0.00
7	Exterior	Porch column	White	Wood	2.03
8	Exterior	Porch column	Red	Brick	0.12
9	Exterior	Porch floor	Red	Concrete	0.00
10	Exterior	Porch ceiling	White	Wood	3.38
11	Exterior	Window casing	White	Wood	1.98
12	Exterior	Window	brown	Wood	0.84
13	Exterior	Siding	White	Wood	4.23
14	Exterior	Porch trim/headers	White	Wood	3.02
15	Exterior	Foundation	Red	Brick	0.03
16	Exterior	House trim, soffit & fascia	White	Wood	1.24
17	Interior	Wall	White	Plaster	0.08
18	Interior	Fireplace mantle	White	Wood	0.15
19	Interior	Base board	White	Wood	0.09
20	Interior	Window casing	White	Wood	0.09
21	Interior	Window	Tan	Wood	0.13
22	Interior	Wainscoting	White	Wood	0.10
23	Interior	Door frame	White	Wood	0.08
24	Interior	Door	White	Wood	0.04
25	Interior	Wall	brown	Wood	0.00

**FIELD DATA SHEET
LBP ANALYSIS**

Project Name: COS 328 Brown Avenue ACM/LBP

Sampled By: Tom Oliver

Project Location: 328 Brown Avenue, Spartanburg SC

Project Manager: Ted Shultz

Project Number: 0815-163

Date: 10/3/2016

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result (mg/cm ²)
26	Interior	Ceiling	Tan	Drywall	0.00
27	Interior	Ceiling	Tan	Plaster	0.09
28	Interior	Door frame	Tan	Wood	0.17
29	Interior	Door	Tan	Wood	0.12
30	Interior	Base board	Tan	Wood	0.11
31	Interior	Wall	Tan	Bead board	1.66
32	Interior	Cabinets	Brown	Wood	0.00
33	Interior	Door frame	Blue	Wood	2.08
34	Interior	Wall	Blue	Wood	3.73
35	Interior	Ceiling	Blue	Wood	3.57
36	Interior	Window	Black	Wood	0.10
37	Interior	Wall	White	Wood	2.67
38	Interior	Wainscoting	Black	Wood	0.36
39	Interior	Cabinets	White	Wood	1.66
40	N/A	Calibration	N/A	N/A	1.08
41					1.12
42					1.06

Bold is Lead Based Paint

SECTION III

Laboratory Analytical Results



EMSL Analytical, Inc.

376 Crompton Street Charlotte, NC 28273

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

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

EMSL Order: 411605972

Customer ID: AXEM25

Customer PO:

Project ID:

Attention: Ted Shultz
Apex Environmental Management
7 Winchester Court
Mauldin, SC 29662

Phone: (803) 348-4921

Fax:

Received Date: 08/03/2016 10:00 AM

Analysis Date: 08/05/2016

Collected Date: 07/26/2016

Project: COS 0815-163 - 328 Brown Ave.

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-Green Shingle <small>411605972-0001</small>	Roof - 6 Layers of Shingles, No Felt	Black/Green Non-Fibrous Homogeneous	20% Cellulose	8% Quartz 72% Non-fibrous (Other)	None Detected
1-Black Shingle <small>411605972-0001A</small>	Roof - 6 Layers of Shingles, No Felt	Black Non-Fibrous Homogeneous	5% Glass	10% Quartz 10% Ca Carbonate 75% Non-fibrous (Other)	None Detected
1-Red Shingle <small>411605972-0001B</small>	Roof - 6 Layers of Shingles, No Felt	Brown/Black Non-Fibrous Homogeneous	5% Glass	10% Quartz 10% Ca Carbonate 75% Non-fibrous (Other)	None Detected
1-Gray Shingle <small>411605972-0001C</small>	Roof - 6 Layers of Shingles, No Felt	Gray/Black Non-Fibrous Homogeneous	20% Cellulose	5% Quartz 75% Non-fibrous (Other)	None Detected
1-White Shingle <small>411605972-0001D</small>	Roof - 6 Layers of Shingles, No Felt	White/Black Fibrous Heterogeneous	20% Cellulose	5% Quartz 75% Non-fibrous (Other)	None Detected
1-Tan/Black Shingle <small>411605972-0001E</small>	Roof - 6 Layers of Shingles, No Felt	White/Black Fibrous Heterogeneous	20% Cellulose	5% Quartz 75% Non-fibrous (Other)	None Detected
2-Green Shingle <small>411605972-0002</small>	Roof - 6 Layers of Shingles, No Felt	Green Fibrous Homogeneous	20% Cellulose	5% Quartz 75% Non-fibrous (Other)	None Detected
2-Black Shingle <small>411605972-0002A</small>	Roof - 6 Layers of Shingles, No Felt	Black Fibrous Homogeneous	8% Glass	5% Quartz 5% Ca Carbonate 82% Non-fibrous (Other)	None Detected
2-Red Shingle <small>411605972-0002B</small>	Roof - 6 Layers of Shingles, No Felt	Red Fibrous Homogeneous	5% Glass	5% Quartz 8% Ca Carbonate 82% Non-fibrous (Other)	None Detected
2-Gray Shingle <small>411605972-0002C</small>	Roof - 6 Layers of Shingles, No Felt	Gray Fibrous Homogeneous	25% Cellulose	5% Quartz 70% Non-fibrous (Other)	None Detected
2-White Shingle <small>411605972-0002D</small>	Roof - 6 Layers of Shingles, No Felt	White Fibrous Homogeneous	20% Cellulose <1% Synthetic	5% Mica 75% Non-fibrous (Other)	None Detected
2-Tan/Black Shingle <small>411605972-0002E</small>	Roof - 6 Layers of Shingles, No Felt	Tan/Black Fibrous Homogeneous	20% Cellulose	5% Quartz 75% Non-fibrous (Other)	None Detected
4 <small>411605972-0003</small>	Windows - Window Glaze	Gray Non-Fibrous Homogeneous		30% Ca Carbonate 70% Non-fibrous (Other)	None Detected
5 <small>411605972-0004</small>	Windows - Window Glaze	Gray Fibrous Homogeneous	2% Fibrous (Other)	10% Ca Carbonate 88% Non-fibrous (Other)	None Detected
7-Tar w/Rocks <small>411605972-0005</small>	Exterior	White/Black/Green Fibrous Heterogeneous		10% Quartz 5% Ca Carbonate 81% Non-fibrous (Other)	4% Chrysotile
7-Insulation <small>411605972-0005A</small>	Exterior	Tan/Black Fibrous Homogeneous	99% Cellulose	1% Non-fibrous (Other)	None Detected

Initial report from: 08/05/2016 13:15:09



EMSL Analytical, Inc.

376 Crompton Street Charlotte, NC 28273

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

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

EMSL Order: 411605972
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
8-Tar w/Rocks	Exterior				Positive Stop (Not Analyzed)
<i>411605972-0006</i>					
8-Insulation	Exterior	Tan Fibrous Homogeneous	100% Cellulose		None Detected
<i>411605972-0006A</i>					
9-Insulation	Exterior	Tan/Black Fibrous Heterogeneous	99% Cellulose	1% Non-fibrous (Other)	None Detected
<i>411605972-0006B</i>					
10-Drywall	Pantry & Living Room - Drywall No Joint Compound	Gray Non-Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
<i>411605972-0007</i>					
10-Joint Compound	Pantry & Living Room - Drywall No Joint Compound	Beige Non-Fibrous Homogeneous		30% Ca Carbonate 68% Non-fibrous (Other)	2% Chrysotile
<i>411605972-0007A</i>					
11-Drywall	Pantry & Living Room - Drywall No Joint Compound	Gray Non-Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
<i>411605972-0008</i>					
11-Joint Compound	Pantry & Living Room - Drywall No Joint Compound				Positive Stop (Not Analyzed)
<i>411605972-0008A</i>					
12-Drywall	Pantry & Living Room - Drywall No Joint Compound	Gray Fibrous Homogeneous	8% Cellulose	92% Non-fibrous (Other)	None Detected
<i>411605972-0009</i>					
12-Joint Compound	Pantry & Living Room - Drywall No Joint Compound				Positive Stop (Not Analyzed)
<i>411605972-0009A</i>					
13-Skim Coat	Throughout Int. - Plaster Wall & Ceiling	White Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
<i>411605972-0010</i>					
13-Rough Coat	Throughout Int. - Plaster Wall & Ceiling	Tan Non-Fibrous Homogeneous	2% Hair	30% Quartz 5% Ca Carbonate 63% Non-fibrous (Other)	None Detected
<i>411605972-0010A</i>					
14-Skim Coat	Throughout Int. - Plaster Wall & Ceiling	White Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
<i>411605972-0011</i>					
14-Rough Coat	Throughout Int. - Plaster Wall & Ceiling	Tan Non-Fibrous Homogeneous	1% Hair	30% Quartz 5% Ca Carbonate 64% Non-fibrous (Other)	None Detected
<i>411605972-0011A</i>					
15-Skim Coat	Throughout Int. - Plaster Wall & Ceiling	White Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
<i>411605972-0012</i>					
15-Rough Coat	Throughout Int. - Plaster Wall & Ceiling	Gray Non-Fibrous Homogeneous	1% Hair	20% Quartz 5% Ca Carbonate 74% Non-fibrous (Other)	None Detected
<i>411605972-0012A</i>					
16-Skim Coat	Throughout Int. - Plaster Wall & Ceiling	White Non-Fibrous Homogeneous		15% Ca Carbonate 85% Non-fibrous (Other)	None Detected
<i>411605972-0013</i>					
16-Rough Coat	Throughout Int. - Plaster Wall & Ceiling	Gray Fibrous Homogeneous	<1% Cellulose	15% Quartz 8% Ca Carbonate 77% Non-fibrous (Other)	None Detected
<i>411605972-0013A</i>					
17-Skim Coat	Throughout Int. - Plaster Wall & Ceiling	White Non-Fibrous Homogeneous		15% Ca Carbonate 85% Non-fibrous (Other)	None Detected
<i>411605972-0014</i>					
17-Rough Coat	Throughout Int. - Plaster Wall & Ceiling	Gray Fibrous Homogeneous	<1% Cellulose	10% Quartz 8% Ca Carbonate 82% Non-fibrous (Other)	None Detected
<i>411605972-0014A</i>					

Initial report from: 08/05/2016 13:15:09



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EMSL Order: 411605972
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 <i>411605972-0015</i>	Kitchen - 12x12 Self Stick Tan Floor Tile	Brown/Tan/Black Non-Fibrous Homogeneous		40% Ca Carbonate 60% Non-fibrous (Other)	None Detected
19 <i>411605972-0016</i>	Kitchen - 12x12 Self Stick Tan Floor Tile	Brown/Tan Fibrous Homogeneous	2% Synthetic	35% Ca Carbonate 63% Non-fibrous (Other)	None Detected
21 <i>411605972-0017</i>	Pantry - Red Roll Vinyl Floor, No Mastic	Gray/Red Fibrous Heterogeneous	10% Cellulose 1% Synthetic 1% Glass	88% Non-fibrous (Other)	None Detected
22 <i>411605972-0018</i>	Pantry - Red Roll Vinyl Floor, No Mastic	Gray/Red Fibrous Homogeneous	15% Cellulose 1% Synthetic 1% Glass	83% Non-fibrous (Other)	None Detected
24-Floor Tile <i>411605972-0019</i>	Bathroom - 12x12 Tan Self Stick Vinyl Floor Tile	Gray/White Fibrous Heterogeneous	2% Synthetic	20% Ca Carbonate 78% Non-fibrous (Other)	None Detected
24-Leveler <i>411605972-0019A</i>	Bathroom - 12x12 Tan Self Stick Vinyl Floor Tile	Beige Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
25 <i>411605972-0020</i>	Bathroom - 12x12 Tan Self Stick Vinyl Floor Tile	Gray Fibrous Homogeneous	2% Synthetic	25% Ca Carbonate 73% Non-fibrous (Other)	None Detected

Analyst(s)

Anupriya Tyagi (16)

Eric Loomis (23)

Lee Plumley, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported 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. 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. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

Samples analyzed by EMSL Analytical, Inc. Charlotte, NC NVLAP Lab Code 200841-0, VA 3333 00312

Initial report from: 08/05/2016 13:15:09



EMSL Analytical, Inc.

376 Crompton Street, Charlotte, NC 28273
Phone/Fax: (704) 525-2205 / (704) 525-2382
<http://www.EMSL.com> charlottelab@emsl.com

EMSL Order: 411605972
CustomerID: AXEM25
CustomerPO:
ProjectID:

Attn: **Ted Shultz**
Apex Environmental Management
7 Winchester Court
Mauldin, SC 29662

Phone: (864) 640-5274
Fax:
Received: 08/05/16 1:20 PM
Analysis Date: 8/9/2016
Collected: 7/26/2016

Project: **COS 0815-163 - 328 Brown Ave.**

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-Green Shingle 411605972-0021	Roof - 6 Layers of Shingles, No Felt	Black/Green Fibrous Heterogeneous	99.3	0.70 Fibrous (other)	No Asbestos Detected
3-Black Shingle 411605972-0022	Roof - 6 Layers of Shingles, No Felt	Black Fibrous Heterogeneous	100	None	No Asbestos Detected
3-Red Shingle 411605972-0023	Roof - 6 Layers of Shingles, No Felt	Red/Black Fibrous Heterogeneous	100	None	No Asbestos Detected
3-Gray Shingle 411605972-0024	Roof - 6 Layers of Shingles, No Felt	Gray/Black Fibrous Heterogeneous	100	None	No Asbestos Detected
3-White Shingle 411605972-0025	Roof - 6 Layers of Shingles, No Felt	White/Black Fibrous Heterogeneous	100	None	No Asbestos Detected
3-Tan/Black Shingle 411605972-0026	Roof - 6 Layers of Shingles, No Felt	Tan/Black Fibrous Heterogeneous	100	None	No Asbestos Detected
6 411605972-0027	Windows - Window Glaze	Gray/Beige Non-Fibrous Heterogeneous	99.9	0.15 Fibrous (other)	<0.1% Chrysotile
20 411605972-0028	Kitchen - 12x12 Self Stick Tan Floor Tile	Tan/Black Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
23 411605972-0029	Pantry - Red Roll Vinyl Floor, No Mastic	Red/Beige Fibrous Heterogeneous	100	None	No Asbestos Detected

Analyst(s)

Aaron Hartley (10)

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. Charlotte, NC

Initial report from 08/09/2016 15:31:14



EMSL Analytical, Inc.

376 Crompton Street, Charlotte, NC 28273
Phone/Fax: (704) 525-2205 / (704) 525-2382
<http://www.EMSL.com> charlottelab@emsl.com

EMSL Order: 411605972
CustomerID: AXEM25
CustomerPO:
ProjectID:

Attn: **Ted Shultz**
Apex Environmental Management
7 Winchester Court
Mauldin, SC 29662

Phone: (864) 640-5274
Fax:
Received: 08/05/16 1:20 PM
Analysis Date: 8/9/2016
Collected: 7/26/2016

Project: **COS 0815-163 - 328 Brown Ave.**

**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
26 411605972-0030	Bathroom - 12x12 Tan Self Stick Vinyl Floor Tile	Gray Non-Fibrous Heterogeneous	100	None	No Asbestos Detected

Analyst(s) _____
Aaron Hartley (10)

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. Charlotte, NC

Initial report from 08/09/2016 15:31:14



Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only):*

Charlotte, NC 28273
PHONE: (704) 525-2205
FAX: (704) 525-2382

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

411605972

Company: Apex Environmental Management		EMSL-Bill to: <input type="checkbox"/> Same <input checked="" type="checkbox"/> Different <small>If Bill to is Different note instructions in Comments**</small>	
Street: 7 Winchester Court		<i>Third Party Billing requires written authorization from third party</i>	
City: Mauldin	State/Province: SC	Zip/Postal Code: 29662	Country: US
Report To (Name): Ted Shultz		Telephone #: 864-404-3210	
Email Address: tshultz@apex-ehs.com		Fax #:	Purchase Order:
Project Name/Number: COS 0815-163 328 Brown Ave		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email <input type="checkbox"/> Mail	
U.S. State Samples Taken: SC		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	

Turnaround Time (TAT) Options* – Please Check

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

*For TEM Air 3 hr through 6 hr, please call ahead to schedule. *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

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 (TEM)
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 in NY)	<input type="checkbox"/> TEM Qualitative via Drop Mount Prep Technique
<input type="checkbox"/> NY ELAP Method 198.6 NOB (non-friable-NY)	Other
<input type="checkbox"/> OSHA ID-191 Modified	<input type="checkbox"/>
<input type="checkbox"/> Standard Addition Method	

Check For Positive Stop – Clearly Identify Homogenous Group **Date Sampled:** 7-26-16

Samplers Name: Ted Shultz **Samplers Signature:** *[Signature]*

Sample #	HA #	Sample Location	Material Description
1		Roof	10 layers of shingles
2			0 felt
3			
4		windows	window glaze
5			
6			
7		exteriors	
8			
9			

Client Sample # (s): 7-26	Total # of Samples:
Relinquished (Client): <i>[Signature]</i> Date: 8-2-16	Time: 3:30pm
Received (Lab): <i>[Signature]</i> Date: 8/3/16	Time: 10:00am EMSL Fk
Comments/Special Instructions: <small>Bill To: Apex Environmental Management, 7 Winchester Court, Mauldin, SC, 29662, US Attention: Rebecca Shultz Phone: 864-404-3210 Email: rshultz@apex-ehs.com Purchase Order:</small>	
7951 7446 5002	

SECTION IV
Photographic Log



Photo 1 -- 328 Brown Avenue in Spartanburg, SC.



Photo 2 – 6 layers of roof shingles with no felt.



Photo 3 – Window glazing.



Photo 4 – Asphalt siding over wooden siding.

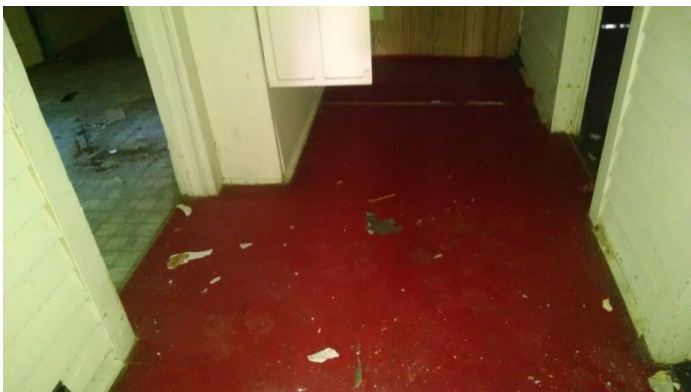


Photo 5 – Red sheet vinyl flooring with no mastic in the pantry.



Photo 6 – 12" x 12" gray self-stick vinyl floor tile in the bathroom.



Photo 7 – 12" x 12" tan self-stick vinyl floor tiles in the kitchen.



Photo 8 – Wooden floors.



Photo 9 – Drywall with joint compound & no tape in the pantry & living room.



Photo 10 – Plaster with finish.

SECTION V

SC DHEC Asbestos Inspector License

**North Carolina
Asbestos Accreditation**



Tedman K Shultz
201 Cannon Circle
Greenville, SC 29607

110723

EXPIRATION			
02-28-2017			
DOB	SEX	HT	WT
03-16-1972	M	5'10"	270
CLASS	#	EXP	
AIR MONITOR	80864	02-17	
INSPECTOR	12900	01-17	

SCDHEC ISSUED
Asbestos ID Card

Tedman K Shultz

Expiration Date



AIR SAMPLER AS-00355 02/02/17
CONSULT BI-00971 01/20/17