



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

City of Spartanburg  
702 Saxon Avenue  
Spartanburg, South Carolina

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

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

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

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

Project Number: 0417-66

May 31, 2017





Apex Project Number 0417-66

May 31, 2017

7 Winchester Court  
Mauldin, SC 29662  
864.404.3210 office  
864.404.3213 fax  
[www.apex-ehs.com](http://www.apex-ehs.com)

Mr. Martin Livingston  
City of Spartanburg  
440 South Church Street, Suite B  
Spartanburg, SC 29306

Reference: Asbestos and Lead-Based Paint Assessment Services  
702 Saxon 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. Livingston:

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  
702 SAXON AVENUE  
SPARTANBURG, SOUTH CAROLINA**

**APEX PROJECT NO. 0417-66**

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**SECTION I**

**Asbestos & Lead Evaluation Report**

<b>ASBESTOS/LEAD EVALUATION REPORT</b> <b>APEX PROJECT NUMBER: 0417-66</b>
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Date:	5/31/2017	Page Number:	1 of 4
Client:	City of Spartanburg	Client Contact:	Mr. Martin Livingston
Client Address:	440 South Church Street Suite B Spartanburg, SC 29306	Client Phone Number:	(864) 580-5323
Project:	Asbestos and Lead Evaluation		
Property Address:	702 Saxon Avenue Spartanburg, SC		
Assessor:	Ben Oliver	Date of Assessment:	4/21/17
Company:	Apex Environmental Management 7 Winchester Court Mauldin, SC 29662	Phone Number:	(864) 404-3210
Purpose of Assessment:	Demolition	Age of Structure:	Approximately 75 years
Building Type:	Residential	Number of Stories:	1
Foundation:	Crawlspace	Approximate Square Footage:	1,125 SF

**EXTERIOR BUILDING MATERIALS**

- Pitched wooden roof with shingles and no felt.
- Cement board siding with felt beneath.
- Unfinished drywall siding beneath portions of cement board and wooden siding.
- Wooden windows with caulk and glazing.
- Vinyl windows with caulk.
- Metal doors with no caulk.
- 2 chimney's with mastic/tar assumed positive.

**INTERIOR BUILDING MATERIALS**

- Plaster with finish over unfinished drywall throughout walls and ceilings.
- Top layer of drywall with joint compound and tape in the living room.
- Wooden floors and ceilings.
- Flooring felt under wooden floors.
- Multiple types and layers of vinyl floors with and without mastics.
- Mastic beneath shower stall in the bathroom.

## **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 CEI Labs (CEI) as an NVLAP certified laboratory, their accreditation number is 101768-0.
- 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-four (44) bulk samples were collected during the survey and submitted to CEI Labs (CEI) in Cary, 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). CEI participates in the National Voluntary Laboratory Accreditation Program (NVLAP). Their NVLAP accreditation number is 101768-0. 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). 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. Materials were analyzed to contain less than 1% asbestos and it should be noted that OSHA asbestos regulations will apply. A specific *PLM* and *TEM* 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 1,700 SF of exterior cement board siding.
- Approximately 12 LF of mastic/tar on 2 chimneys – assumed positive.

### Lead Based Paint

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

Currently, the EPA defines LBP as paint containing in excess of, or equal to,  $1.0 \text{ mg}/\text{cm}^2$ . The XRF analytical results and approximate locations of the paint samples collected are included in the Lead Analysis Report in Appendix II.

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

- Exterior white wooden porch columns.
- Exterior white wooden window sills.
- Exterior blue wooden porch ceiling.
- Exterior blue wooden windows.
- Exterior brown wooden doors.
- Interior blue and cream plaster walls and ceilings.

## **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 ( $\text{mg}/\text{cm}^2$ ) 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 702 Saxon Avenue ACM/LBP

Sampled By: Ben Oliver

Project Location: 702 Saxon Avenue, Spartanburg, SC

Project Manager: Tom Oliver

Project Number: 0417-66

Date: 4/21/2017

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
1	Roof	Roof shingles (2 layers) and no felt	PLM - NAD	Non-Friable	Good	1,350 SF
2			TEM - NAD			
3						
4	Siding	Cement board siding	15% Chrysotile	Non-Friable	Good	1,700 SF
5						
6						
7	Siding	Felt paper beneath cement board siding	PLM - NAD	Non-Friable	Good	1,700 SF
8			TEM - <1% Chrysotile			
9						
10	Siding	Unfinished drywall under portions of cement board and wooden siding	PLM - NAD	Friable	Good	1,000 SF
11						
12						
13	Wooden windows	Window glazing	PLM - NAD	Non-Friable	Good	4 EA
14			TEM - NAD			
15	Wooden windows	Window caulk	PLM - NAD	Non-Friable	Good	4 EA
16			TEM - NAD			
17						
18	Vinyl windows	Window caulk	PLM - NAD	Non-Friable	Good	8 EA
19			TEM - NAD			
20						
21	Living room walls & ceiling	Drywall with joint compound and tape	PLM - NAD	Friable	Good	625 SF
22						
23						
24						

# ASBESTOS SURVEY FIELD DATA SHEET

Project Name: COS 702 Saxon Avenue ACM/LBP

Sampled By: Ben Oliver

Project Location: 702 Saxon Avenue, Spartanburg, SC

Project Manager: Tom Oliver

Project Number: 0417-66

Date: 4/21/2017

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
25	Throughout walls & ceilings	Plaster with finish over unfinished drywall	PLM - NAD	Friable	Good	2,100 SF
26						
27						
28						
29						
30	Kitchen	Brown large square pattern vinyl floor with no mastic	PLM - NAD	Non-Friable	Good	100 SF
31			TEM - NAD			
32						
33	Bathroom	Beige medium square pattern vinyl floor with no mastic	PLM - NAD	Non-Friable	Good	20 SF
34			TEM - NAD			
35						
36	Throughout	Flooring felt under wooden floors	PLM - NAD	Non-Friable	Good	1,125 SF
37			TEM - NAD			
38						
39	Bathroom	Mastic beneath shower stall	PLM - NAD	Non-Friable	Good	40 SF
40			TEM - NAD			
41						
42	Kitchen (2nd layer under wood)	Tan pattern vinyl floor with mastic	PLM - NAD	Non-Friable	Good	100 SF
43			TEM - NAD			
44						
<b>Assumed</b>	<b>2 Chimneys</b>	<b>Chimney mastic/tar</b>	<b>Assumed</b>	<b>Non-Friable</b>	<b>Good</b>	<b>12 LF</b>
NAD = No Asbestos Detected		LF = Linear Feet	EA = Each			
<b>Bold = Positive For Asbestos</b>		SF = Square Feet	Chry = Chrysotile			

**FIELD DATA SHEET  
LBP ANALYSIS**

Project Name: COS 702 Saxon Avenue ACM/LBP

Sampled By: Ben Oliver

Project Location: 702 Saxon Avenue, Spartanburg SC

Project Manager: Ben Oliver

Project Number: 0417-66

Date: 4/21/2017

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result (mg/m <sup>3</sup> )
1	Standardization Calibration				184.00
2	Calibration				1.10
3	Calibration				1.00
4	Calibration				0.97
5	Exterior	Siding	Blue	Cement board	0.00
<b>6</b>	<b>Exterior</b>	<b>Porch column</b>	<b>White</b>	<b>Wood</b>	<b>2.03</b>
7	Exterior	Door frame	White	Wood	0.00
<b>8</b>	<b>Exterior</b>	<b>Window sill</b>	<b>White</b>	<b>Wood</b>	<b>1.28</b>
9	Exterior	Door	Cream	Metal	0.01
10	Exterior	Window	White	Vinyl	0.00
<b>11</b>	<b>Exterior</b>	<b>Porch ceiling</b>	<b>Blue</b>	<b>Wood</b>	<b>1.44</b>
12	Exterior	Porch trim	White	Wood	0.99
<b>13</b>	<b>Exterior</b>	<b>Window</b>	<b>Blue</b>	<b>Wood</b>	<b>1.10</b>
14	Exterior	Window frame	Blue	Wood	0.95
15	Exterior	Trim	Blue	Wood	0.56
<b>16</b>	<b>Exterior</b>	<b>Door</b>	<b>Brown</b>	<b>Wood</b>	<b>3.06</b>
17	Interior	Cabinet	White	Wood	0.70
<b>18</b>	<b>Interior</b>	<b>Wall</b>	<b>Blue</b>	<b>Plaster</b>	<b>1.00</b>
<b>19</b>	<b>Interior</b>	<b>Wall</b>	<b>Cream</b>	<b>Plaster</b>	<b>1.00</b>
20	Interior	Door frame	White	Wood	0.00
21	Interior	Floor	Brown	Wood	0.00
22	Interior	Base board	Cream	Wood	0.20
23	Interior	Window frame	Cream	Wood	0.00
24	Interior	Wall	Brown	Plaster	0.21

**FIELD DATA SHEET  
LBP ANALYSIS**

Project Name: COS 702 Saxon Avenue ACM/LBP

Sampled By: Ben Oliver

Project Location: 702 Saxon Avenue, Spartanburg SC

Project Manager: Ben Oliver

Project Number: 0417-66

Date: 4/21/2017

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result (mg/m <sup>3</sup> )
25	Interior	Door	White	Wood	0.25
26	Interior	Wall	Dark blue	Plaster	0.00
27	Interior	Wall	Pink	Plaster	0.00
28	Interior	Fireplace mantle	Cream	Wood	0.95

**Bold = LBP**

**SECTION III**

**Laboratory Analytical Results**



May 1, 2017

Apex Environmental Management  
7 Winchester Court  
Mauldin, SC 29662

**CLIENT PROJECT:** COS 702 Saxon Ave ACM & LBP; 0417-66  
**CEI LAB CODE:** A17-5878

Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on April 24, 2017. The samples were analyzed for asbestos using polarizing light microscopy (PLM) per the EPA 600 Method.

Sample results containing >1% asbestos are considered asbestos-containing materials (ACMs) per EPA regulatory requirements. The detection limit for the EPA 600 Method is <1% asbestos by weight as determined by visual estimation.

Thank you for your business and we look forward to continuing good relations. If you have any questions, please feel free to call our office at 919-481-1413.

Kind Regards,

A handwritten signature in black ink, appearing to read "Tianbao Bai".

Tianbao Bai, Ph.D., CIH  
Laboratory Director





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**ASBESTOS ANALYTICAL REPORT**  
**By: Polarized Light Microscopy**

Prepared for

**Apex Environmental Management**

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CLIENT PROJECT: COS 702 Saxon Ave ACM & LBP; 0417-66

CEI LAB CODE: A17-5878

TEST METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 05/01/17

TOTAL SAMPLES ANALYZED: 32

# SAMPLES >1% ASBESTOS: 1

**TEL: 866-481-1412**

*[www.ceilabs.com](http://www.ceilabs.com)*





# Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: COS 702 Saxon Ave ACM & LBP; 0417      CEI LAB CODE: A17-5878  
-66

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
1	Layer 1	A2384137	Black	Roof Shingle	None Detected
	Layer 2	A2384137	Gray,Black	Roof Shingle	None Detected
2	Layer 1	A2384138	Black	Roof Shingle	None Detected
	Layer 2	A2384138	Gray,Black	Roof Shingle	None Detected
3		A2384139		Sample Submitted for TEM Analysis	
4		A2384140	Gray	Cement Board Siding	<b>Chrysotile 15%</b>
5		A2384141		Sample Not Analyzed per COC	
6		A2384142		Sample Not Analyzed per COC	
7		A2384143	Black	Felt Paper	None Detected
8		A2384144	Black	Felt Paper	None Detected
9		A2384145		Sample Submitted for TEM Analysis	
10		A2384146	Gray	Unfinished Drywall	None Detected
11		A2384147	Gray	Unfinished Drywall	None Detected
12		A2384148	Gray	Unfinished Drywall	None Detected
13		A2384149	Gray,White	Window Glazing	None Detected
14		A2384150	Gray,White	Window Glazing	None Detected
15		A2384151		Sample Submitted for TEM Analysis	
16		A2384152	Blue,White	Window Caulk	None Detected
17		A2384153	Blue,White	Window Caulk	None Detected
18		A2384154		Sample Submitted for TEM Analysis	
19		A2384155	Tan,White	Window Caulk	None Detected
20		A2384156	Tan,White	Window Caulk	None Detected
21		A2384157		Sample Submitted for TEM Analysis	
22	Layer 1	A2384158	White	Drywall	None Detected
	Layer 2	A2384158	White	Joint Compound	None Detected
	Layer 3	A2384158	White	Tape	None Detected
23	Layer 1	A2384159	White	Drywall	None Detected



# Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

**PROJECT:** COS 702 Saxon Ave ACM & LBP; 0417      **CEI LAB CODE:** A17-5878  
 -66

**METHOD:** EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
	Layer 2	A2384159	White	Joint Compound	None Detected
	Layer 3	A2384159	White	Tape	None Detected
24	Layer 1	A2384160	White	Drywall	None Detected
	Layer 2	A2384160	White	Joint Compound	None Detected
	Layer 3	A2384160	White	Tape	None Detected
25	Layer 1	A2384161A	White	Finish	None Detected
	Layer 2	A2384161A	Gray	Plaster	None Detected
		A2384161B	White	Sheetrock	None Detected
26	Layer 1	A2384162A	White	Finish	None Detected
	Layer 2	A2384162A	Gray	Plaster	None Detected
		A2384162B	White	Sheetrock	None Detected
27	Layer 1	A2384163A	White	Finish	None Detected
	Layer 2	A2384163A	Gray	Plaster	None Detected
		A2384163B	White	Sheetrock	None Detected
28	Layer 1	A2384164A	White	Finish	None Detected
	Layer 2	A2384164A	Gray	Plaster	None Detected
		A2384164B	White	Sheetrock	None Detected
29	Layer 1	A2384165A	White	Finish	None Detected
	Layer 2	A2384165A	Gray	Plaster	None Detected
		A2384165B	White	Sheetrock	None Detected
30		A2384166	Brown	Vinyl Floor	None Detected
31		A2384167	Brown	Vinyl Floor	None Detected
32		A2384168		Sample Submitted for TEM Analysis	
33		A2384169	Beige	Vinyl Floor	None Detected
34		A2384170	Beige	Vinyl Floor	None Detected
35		A2384171		Sample Submitted for TEM Analysis	
36		A2384172	Black	Flooring Felt	None Detected
37		A2384173	Black	Flooring Felt	None Detected
38		A2384174		Sample Submitted for TEM Analysis	



# Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

**PROJECT:** COS 702 Saxon Ave ACM & LBP; 0417  
-66

**CEI LAB CODE:** A17-5878

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**METHOD:** EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
39		A2384175	Tan	Mastic	None Detected
40		A2384176	Tan	Mastic	None Detected
41		A2384177		Sample Submitted for TEM Analysis	
42		A2384178A	Tan	Vinyl Floor (tile)	None Detected
		A2384178B	Brown	Mastic	None Detected
43		A2384179A	Tan	Vinyl Floor (tile)	None Detected
		A2384179B	Brown	Mastic	None Detected
44		A2384180		Sample Submitted for TEM Analysis	



# ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

**Client:** Apex Environmental Management  
 7 Winchester Court  
 Mauldin, SC 29662

**CEI Lab Code:** A17-5878  
**Date Received:** 04-24-17  
**Date Analyzed:** 04-28-17  
**Date Reported:** 05-01-17

**Project:** COS 702 Saxon Ave ACM & LBP; 0417-66

## ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
1 Layer 1 A2384137	Roof Shingle	Heterogeneous Black Fibrous Bound	20%	Fiberglass	45%	Tar	None Detected
					35%	Silicates	
Layer 2 A2384137	Roof Shingle	Heterogeneous Gray,Black Fibrous Bound	20%	Fiberglass	45%	Tar	None Detected
					35%	Silicates	
2 Layer 1 A2384138	Roof Shingle	Heterogeneous Black Fibrous Bound	20%	Fiberglass	45%	Tar	None Detected
					35%	Silicates	
Layer 2 A2384138	Roof Shingle	Heterogeneous Gray,Black Fibrous Bound	20%	Fiberglass	45%	Tar	None Detected
					35%	Silicates	
3 A2384139	Sample Submitted for TEM Analysis						
4 A2384140	Cement Board Siding	Heterogeneous Gray Fibrous Bound	85%	Binder	15% Chrysotile		
5 A2384141	Sample Not Analyzed per COC						
6 A2384142	Sample Not Analyzed per COC						
7 A2384143	Felt Paper	Homogeneous Black Fibrous Bound	75%	Cellulose	25%	Tar	None Detected



# ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

**Client:** Apex Environmental Management  
 7 Winchester Court  
 Mauldin, SC 29662

**CEI Lab Code:** A17-5878  
**Date Received:** 04-24-17  
**Date Analyzed:** 04-28-17  
**Date Reported:** 05-01-17

**Project:** COS 702 Saxon Ave ACM & LBP; 0417-66

## ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
<b>8</b> A2384144	Felt Paper	Homogeneous Black Fibrous Bound	75%	Cellulose	25%	Tar	None Detected
<b>9</b> A2384145	Sample Submitted for TEM Analysis						
<b>10</b> A2384146	Unfinished Drywall	Heterogeneous Gray Fibrous Bound	5%	Cellulose	95%	Gypsum	None Detected
<b>11</b> A2384147	Unfinished Drywall	Heterogeneous Gray Fibrous Bound	5%	Cellulose	95%	Gypsum	None Detected
<b>12</b> A2384148	Unfinished Drywall	Heterogeneous Gray Fibrous Bound	5%	Cellulose	95%	Gypsum	None Detected
<b>13</b> A2384149	Window Glazing	Heterogeneous Gray,White Fibrous Bound	2%	Fiberglass	3%	Paint Binder Calc Carb	None Detected
<b>14</b> A2384150	Window Glazing	Heterogeneous Gray,White Fibrous Bound	2%	Fiberglass	3%	Paint Binder Calc Carb	None Detected
<b>15</b> A2384151	Sample Submitted for TEM Analysis						



# ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

**Client:** Apex Environmental Management  
 7 Winchester Court  
 Mauldin, SC 29662

**CEI Lab Code:** A17-5878  
**Date Received:** 04-24-17  
**Date Analyzed:** 04-28-17  
**Date Reported:** 05-01-17

**Project:** COS 702 Saxon Ave ACM & LBP; 0417-66

## ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS			ASBESTOS %
			Fibrous	Non-Fibrous		
16 A2384152	Window Caulk	Heterogeneous Blue,White Non-fibrous Bound	5%	Paint	None Detected	
			95%	Caulk		
17 A2384153	Window Caulk	Heterogeneous Blue,White Non-fibrous Bound	5%	Paint	None Detected	
			95%	Caulk		
18 A2384154	Sample Submitted for TEM Analysis					
19 A2384155	Window Caulk	Heterogeneous Tan,White Non-fibrous Bound	5%	Binder	None Detected	
			95%	Caulk		
20 A2384156	Window Caulk	Heterogeneous Tan,White Non-fibrous Bound	5%	Binder	None Detected	
			95%	Caulk		
21 A2384157	Sample Submitted for TEM Analysis					
22 Layer 1 A2384158	Drywall	Heterogeneous White Fibrous Bound	10%	Cellulose	None Detected	
			90%	Gypsum		
Layer 2 A2384158	Joint Compound	Heterogeneous White Non-fibrous Bound	5%	Paint	None Detected	
			50%	Binder		
			45%	Calc Carb		



# ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

**Client:** Apex Environmental Management  
 7 Winchester Court  
 Mauldin, SC 29662

**CEI Lab Code:** A17-5878  
**Date Received:** 04-24-17  
**Date Analyzed:** 04-28-17  
**Date Reported:** 05-01-17

**Project:** COS 702 Saxon Ave ACM & LBP; 0417-66

## ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
Layer 3 A2384158	Tape	Heterogeneous White Fibrous Bound	90%	Fiberglass	10%	Binder	None Detected
<b>23</b> Layer 1 A2384159	Drywall	Heterogeneous White Fibrous Bound	10%	Cellulose	90%	Gypsum	None Detected
Layer 2 A2384159	Joint Compound	Heterogeneous White Non-fibrous Bound			5%	Paint	None Detected
					50%	Binder	
					45%	Calc Carb	
Layer 3 A2384159	Tape	Heterogeneous White Fibrous Bound	90%	Fiberglass	10%	Binder	None Detected
<b>24</b> Layer 1 A2384160	Drywall	Heterogeneous White Fibrous Bound	10%	Cellulose	90%	Gypsum	None Detected
Layer 2 A2384160	Joint Compound	Heterogeneous White Non-fibrous Bound			5%	Paint	None Detected
					50%	Binder	
					45%	Calc Carb	
Layer 3 A2384160	Tape	Heterogeneous White Fibrous Bound	90%	Fiberglass	10%	Binder	None Detected



# ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

**Client:** Apex Environmental Management  
 7 Winchester Court  
 Mauldin, SC 29662

**CEI Lab Code:** A17-5878  
**Date Received:** 04-24-17  
**Date Analyzed:** 04-28-17  
**Date Reported:** 05-01-17

**Project:** COS 702 Saxon Ave ACM & LBP; 0417-66

## ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
25 Layer 1 A2384161A	Finish	Heterogeneous			5%	Paint	None Detected
		White			45%	Binder	
		Non-fibrous			50%	Calc Carb	
		Bound					
Layer 2 A2384161A	Plaster	Heterogeneous	<1%	Cellulose	60%	Binder	None Detected
		Gray			40%	Silicates	
		Non-fibrous					
		Bound					
A2384161B	Sheetrock	Heterogeneous	10%	Cellulose	90%	Gypsum	None Detected
		White					
		Fibrous					
		Bound					
26 Layer 1 A2384162A	Finish	Heterogeneous			5%	Paint	None Detected
		White			45%	Binder	
		Non-fibrous			50%	Calc Carb	
		Bound					
Layer 2 A2384162A	Plaster	Heterogeneous	<1%	Cellulose	60%	Binder	None Detected
		Gray			40%	Silicates	
		Non-fibrous					
		Bound					
A2384162B	Sheetrock	Heterogeneous	10%	Cellulose	90%	Gypsum	None Detected
		White					
		Fibrous					
		Bound					
27 Layer 1 A2384163A	Finish	Heterogeneous			5%	Paint	None Detected
		White			45%	Binder	
		Non-fibrous			50%	Calc Carb	
		Bound					





# ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

**Client:** Apex Environmental Management  
 7 Winchester Court  
 Mauldin, SC 29662

**CEI Lab Code:** A17-5878  
**Date Received:** 04-24-17  
**Date Analyzed:** 04-28-17  
**Date Reported:** 05-01-17

**Project:** COS 702 Saxon Ave ACM & LBP; 0417-66

## ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
Layer 2 A2384163A	Plaster	Heterogeneous Gray Non-fibrous Bound	<1%	Cellulose	60%	Binder Silicates	None Detected
A2384163B	Sheetrock	Heterogeneous White Fibrous Bound	10%	Cellulose	90%	Gypsum	None Detected
<b>28</b> Layer 1 A2384164A	Finish	Heterogeneous White Non-fibrous Bound			5% 45% 50%	Paint Binder Calc Carb	None Detected
Layer 2 A2384164A	Plaster	Heterogeneous Gray Non-fibrous Bound	<1%	Cellulose	60%	Binder Silicates	None Detected
A2384164B	Sheetrock	Heterogeneous White Fibrous Bound	10%	Cellulose	90%	Gypsum	None Detected
<b>29</b> Layer 1 A2384165A	Finish	Heterogeneous White Non-fibrous Bound			5% 45% 50%	Paint Binder Calc Carb	None Detected
Layer 2 A2384165A	Plaster	Heterogeneous Gray Non-fibrous Bound	<1%	Cellulose	60%	Binder Silicates	None Detected



# ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

**Client:** Apex Environmental Management  
 7 Winchester Court  
 Mauldin, SC 29662

**CEI Lab Code:** A17-5878  
**Date Received:** 04-24-17  
**Date Analyzed:** 04-28-17  
**Date Reported:** 05-01-17

**Project:** COS 702 Saxon Ave ACM & LBP; 0417-66

## ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
A2384165B	Sheetrock	Heterogeneous White Fibrous Bound	10%	Cellulose	90%	Gypsum	None Detected
<b>30</b> A2384166	Vinyl Floor	Heterogeneous Brown Fibrous Bound	5%	Fiberglass	95%	Vinyl	None Detected
<b>31</b> A2384167	Vinyl Floor	Heterogeneous Brown Fibrous Bound	5%	Fiberglass	95%	Vinyl	None Detected
<b>32</b> A2384168	Sample Submitted for TEM Analysis						
<b>33</b> A2384169	Vinyl Floor	Heterogeneous Beige Fibrous Bound	5%	Fiberglass	95%	Vinyl	None Detected
<b>34</b> A2384170	Vinyl Floor	Heterogeneous Beige Fibrous Bound	5%	Fiberglass	95%	Vinyl	None Detected
<b>35</b> A2384171	Sample Submitted for TEM Analysis						
<b>36</b> A2384172	Flooring Felt	Homogeneous Black Fibrous Bound	75%	Cellulose	25%	Tar	None Detected



# ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

**Client:** Apex Environmental Management  
 7 Winchester Court  
 Mauldin, SC 29662

**CEI Lab Code:** A17-5878  
**Date Received:** 04-24-17  
**Date Analyzed:** 04-28-17  
**Date Reported:** 05-01-17

**Project:** COS 702 Saxon Ave ACM & LBP; 0417-66

## ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
<b>37</b> A2384173	Flooring Felt	Homogeneous Black Fibrous Bound	75%	Cellulose	25%	Tar	None Detected
<b>38</b> A2384174	Sample Submitted for TEM Analysis						
<b>39</b> A2384175	Mastic	Homogeneous Tan Non-fibrous Bound			100%	Mastic	None Detected
<b>40</b> A2384176	Mastic	Homogeneous Tan Non-fibrous Bound			100%	Mastic	None Detected
<b>41</b> A2384177	Sample Submitted for TEM Analysis						
<b>42</b> A2384178A	Vinyl Floor (tile)	Heterogeneous Tan Non-fibrous Bound			80%	Vinyl	None Detected
					20%	Calc Carb	
A2384178B	Mastic	Heterogeneous Brown Fibrous Bound	15%	Cellulose	85%	Mastic	None Detected
<b>43</b> A2384179A	Vinyl Floor (tile)	Heterogeneous Tan Non-fibrous Bound			80%	Vinyl	None Detected
					20%	Calc Carb	



# ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

**Client:** Apex Environmental Management  
7 Winchester Court  
Mauldin, SC 29662

**CEI Lab Code:** A17-5878  
**Date Received:** 04-24-17  
**Date Analyzed:** 04-28-17  
**Date Reported:** 05-01-17

**Project:** COS 702 Saxon Ave ACM & LBP; 0417-66

## ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS			ASBESTOS %	
			Fibrous	Non-Fibrous			
A2384179B	Mastic	Heterogeneous Brown Fibrous Bound	15%	Cellulose	85%	Mastic	None Detected

**44** Sample Submitted for  
A2384180 TEM Analysis



**LEGEND:** Non-Anth = Non-Asbestiform Anthophyllite  
Non-Trem = Non-Asbestiform Tremolite  
Calc Carb = Calcium Carbonate

**METHOD:** EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

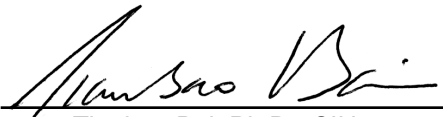
**REPORTING LIMIT:** <1% by visual estimation

**REGULATORY LIMIT:** >1% by weight

Due to the limitations of the EPA 600 method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarized light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation. Estimated measurement of uncertainty is available on request.

This report relates only to the samples tested or analyzed and may not be reproduced, except in full, without written approval by CEI Labs, Inc. CEI Labs makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results. Interpretation of the analytical results is the sole responsibility of the client. Samples were received in acceptable condition unless otherwise noted. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.

**ANALYST:**   
Greg Ruff

**APPROVED BY:**   
Tianbao Bai, Ph.D., CIH  
Laboratory Director





107 New Edilion Court, Cary, NC 27511  
 Tel: 866-481-1412; Fax: 919-481-1442

# ASBESTOS CHAIN OF CUSTODY

(44) A17-5878  
 A2384137-  
 A2384180

LAB USE ONLY:
CEI Lab Code:
CEI Lab I.D. Range:

COMPANY INFORMATION	PROJECT INFORMATION
CEI CLIENT #:	Job Contact: Ben Oliver
Company: Apex Environmental Management, Inc.	Email / Tel: boliver@apex-ehs.com
Address: 7 Winchester Court	Project Name: COS 702 Saxon Ave ACM & LBP
Mauldin, South Carolina 29662	Project ID# 0417-66
Email: boliver@apex-ehs.com	PO #:
Tel: 864-404-3210 Fax: 864-404-3213	STATE SAMPLES COLLECTED IN: South Carolina

GENERAL INSTRUCTIONS		
POSITIVE STOP ANALYSIS	<input checked="" type="checkbox"/>	PLM DUE DATE: / /
ANALYZE NOB'S BY TEM	<input checked="" type="checkbox"/>	TEM DUE DATE: / /

IF TAT IS NOT MARKED STANDARD 3 DAY TAT APPLIES.

ASBESTOS	METHOD	TURN AROUND TIME					
		4 HR	8 HR	24 HR	2 DAY	3 DAY	5 DAY
PLM BULK	EPA 600	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PLM POINT COUNT (400)	EPA 600	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLM POINT COUNT (1000)	EPA 600	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLM GRAV w POINT COUNT	EPA 600	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PCM AIR	NIOSH 7400	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM AIR AHERA	EPA AHERA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM AIR NIOSH	NIOSH 7402	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM BULK	CHATFIELD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TEM DUST WIPE	ASTM D6480-05	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM DUST MICROVAC	ASTM D5755-09	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM SOIL	ASTM D7521-13	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM VERMICULITE	CINCINNATI METHOD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OTHER:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

REMARKS: Utilize Positive Stop During Analysis		<input checked="" type="checkbox"/> Accept Samples <input type="checkbox"/> Reject Samples	
Relinquished By:	Date/Time	Received By:	Date/Time
<i>[Signature]</i>	4-21-17	DC	4-24-17 9:00

Samples will be disposed of 30 days after analysis

# ASBESTOS SAMPLING FORM



COMPANY CONTACT INFORMATION	
Company: <i>Apex Environmental Mgt.</i>	Job Contact: <i>Ben Olive</i>
Project Name: <i>COS 702 Saxon Ave ACM / LRP</i>	
Project ID #: <i>0417-66</i>	Tel: <i>864-404-3210</i>

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
			PLM	TEM
1	<i>Roof shingles (2 layers) and no felt</i>		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
2			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
3			PLM <input type="checkbox"/>	TEM <input checked="" type="checkbox"/>
4	<i>Cement board siding</i>		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
5			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
6	<i>Felt paper beneath cement board siding</i>		PLM <input type="checkbox"/>	TEM <input checked="" type="checkbox"/>
7			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
8			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
9	<i>Unfinished drywall</i>		PLM <input type="checkbox"/>	TEM <input checked="" type="checkbox"/>
10			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
11			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
12	<i>Window glazing</i>		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
13			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
14			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
15	<i>Window caulk</i>		PLM <input type="checkbox"/>	TEM <input checked="" type="checkbox"/>
16			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
17			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
18	<i>Window caulk</i>		PLM <input type="checkbox"/>	TEM <input checked="" type="checkbox"/>
19			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
20			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
21	<i>Drywall with joint compound and tape</i>		PLM <input type="checkbox"/>	TEM <input checked="" type="checkbox"/>
22			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
23			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
24	<i>Plaster with finish</i>		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
25			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
26			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
27			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
28			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
29			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
30	<i>Brown large square pattern</i>	↓	PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>







May 5, 2017

Apex Environmental Management  
7 Winchester Court  
Mauldin, SC 29662

**CLIENT PROJECT:** COS 702 Saxon Ave ACM & LBP; 0417-66  
**CEI LAB CODE:** T17-0807

Dear Customer:

Enclosed are asbestos analysis results for TEM bulk samples received at our laboratory on April 28, 2017. The samples were analyzed for asbestos using transmission electron microscopy (TEM) per Chatfield Method.

Sample results containing > 1% asbestos are considered asbestos-containing materials (ACMs) per the EPA regulatory requirements. The detection limit for the TEM Chatfield method is <1% depending on the processed weight and constituents of the sample.

Thank you for your business and we look forward to continuing good relations. If you have any questions, please feel free to call our office at 919-481-1413.

Kind Regards,

A handwritten signature in black ink, appearing to read 'Tianbao Bai', is written in a cursive style.

Tianbao Bai, Ph.D., CIH  
Laboratory Director



---

**ASBESTOS ANALYTICAL REPORT**  
**By: Transmission Electron Microscopy**

Prepared for

**Apex Environmental Management**

---

CLIENT PROJECT: COS 702 Saxon Ave ACM & LBP; 0417-66

CEI LAB CODE: T17-0807

TEST METHOD: Bulk Chatfield  
EPA 600 / R93 / 116

REPORT DATE: 05/05/17

**TEL: 866-481-1412**

*[www.ceilabs.com](http://www.ceilabs.com)*



# ASBESTOS BULK ANALYSIS

By: TRANSMISSION ELECTRON MICROSCOPY

**Client:** Apex Environmental Management  
 7 Winchester Court  
 Mauldin, SC 29662

**CEI Lab Code:** T17-0807  
**Date Received:** 04-28-17  
**Date Analyzed:** 05-04-17  
**Date Reported:** 05-05-17

**Project:** COS 702 Saxon Ave ACM & LBP; 0417-66

## TEM BULK CHATFIELD / EPA 600 / R93 / 116

Client ID Lab ID	Material Description	Sample Weight (g)	Organic Material %	Acid Soluble Material %	Acid Insoluble Material %	Asbestos %
3 T61838	Black Roof Shingle	0.329	21.3	41.3	37.4	None Detected
3 T61839	Gray, Black Roof Shingle	0.284	26.1	51.1	22.8	None Detected
9 T61840	Black Felt Paper	0.741	96	2.8	1.2	<1% Chrysotile
15 T61841	Gray, White Window Glazing	0.388	22.4	59.5	18.1	None Detected
18 T61842	Blue, White Window Caulk	0.344	29.4	61.3	9.3	None Detected
21 T61843	Tan, White Window Caulk	0.231	21.6	77.1	1.3	None Detected
32 T61844	Brown Vinyl Floor	0.501	70.9	18.6	10.5	None Detected
35 T61845	Beige Vinyl Floor	0.525	63.2	34.1	2.7	None Detected
38 T61846	Black Flooring Felt	0.204	83.8	15.2	1	None Detected
41 T61847	Tan Mastic	0.242	30.6	66.5	2.9	None Detected
44 T61848	Tan Vinyl Floor (Tile)	0.542	16.1	81.9	2	None Detected
44 T61849	Brown Mastic	0.128	54.7	27.3	18	None Detected



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**LEGEND:** None

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**METHOD:** CHATFIELD & EPA/600/R-93/116

---

**LIMIT OF DETECTION:** Varies with the weight and constituents of the sample (<1%)

---

**REGULATORY LIMIT:** >1% by weight

---

This report relates only to the samples tested or analyzed and may not be reproduced, except in full, without written approval by CEI Labs, Inc. CEI Labs makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results. Interpretation of the analytical results is the sole responsibility of the client. Estimated measurement of uncertainty is available on request. Samples were received in acceptable condition unless otherwise noted.

**ANALYST:**

*Kamila Reichert*

Kamila Reichert

**APPROVED BY:**

*Tianbao Bai*

Tianbao Bai, Ph.D., CIH  
Laboratory Director

(12) T17-0807  
 T61838-849 (44) A17-5878  
 A2384137-  
**ASBESTOS**  
**CHAIN OF CUSTODY** A2384180



107 New Edition Court, Cary, NC 27511  
 Tel: 866-481-1412; Fax: 919-481-1442

LAB USE ONLY:
CEI Lab Code:
CEI Lab I.D. Range:

COMPANY INFORMATION	PROJECT INFORMATION
CEI CLIENT #:	Job Contact: Ben Oliver
Company: Apex Environmental Management, Inc.	Email / Tel: boliver@apex-ehs.com
Address: 7 Winchester Court Mauldin, South Carolina 29662	Project Name: COS 702 Saxon Ave ACM & LBP
Email: boliver@apex-ehs.com	Project ID# 0417-66
Tel: 864-404-3210 Fax: 864-404-3213	PO #:
STATE SAMPLES COLLECTED IN: South Carolina	

GENERAL INSTRUCTIONS		
POSITIVE STOP ANALYSIS	<input checked="" type="checkbox"/>	PLM DUE DATE: / /
ANALYZE NOB'S BY TEM	<input checked="" type="checkbox"/>	TEM DUE DATE: / /

IF TAT IS NOT MARKED STANDARD 3 DAY TAT APPLIES.

ASBESTOS	METHOD	TURN AROUND TIME					
		4 HR	8 HR	24 HR	2 DAY	3 DAY	5 DAY
PLM BULK	EPA 600	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PLM POINT COUNT (400)	EPA 600	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLM POINT COUNT (1000)	EPA 600	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLM GRAV w POINT COUNT	EPA 600	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PCM AIR	NIOSH 7400	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM AIR AHERA	EPA AHERA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM AIR NIOSH	NIOSH 7402	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM BULK	CHATFIELD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TEM DUST WIPE	ASTM D6480-05	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM DUST MICROVAC	ASTM D5755-09	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM SOIL	ASTM D7521-13	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM VERMICULITE	CINCINNATI METHOD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OTHER:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

REMARKS: Utilize Positive Stop During Analysis			<input checked="" type="checkbox"/> Accept Samples
			<input type="checkbox"/> Reject Samples
Relinquished By:	Date/Time	Received By:	Date/Time
<i>[Signature]</i>	4-21-17	DC	4-24-17 9:00
Griffith	4/23/17 16:00		

Samples will be disposed of 30 days after analysis

# ASBESTOS SAMPLING FORM



COMPANY CONTACT INFORMATION	
Company: <u>Apex Environmental Mgt.</u>	Job Contact: <u>Ben Oliver</u>
Project Name: <u>COS 702 Saxon Ave ACM/LRP</u>	
Project ID #: <u>0417-66</u>	Tel: <u>864-404-3210</u>

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
			PLM	TEM
1	Roof shingles (2 layers) and no felt		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
2			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
3	Cement board		PLM <input type="checkbox"/>	TEM <input checked="" type="checkbox"/>
4			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
5	Siding		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
6			PLM <input type="checkbox"/>	TEM <input checked="" type="checkbox"/>
7	Felt paper beneath cement board siding		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
8			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
9	Unfinished drywall		PLM <input type="checkbox"/>	TEM <input checked="" type="checkbox"/>
10			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
11	Window glazing		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
12			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
13	Window caulk		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
14			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
15	Window caulk		PLM <input type="checkbox"/>	TEM <input checked="" type="checkbox"/>
16			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
17	Window caulk		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
18			PLM <input type="checkbox"/>	TEM <input checked="" type="checkbox"/>
19	Drywall with joint compound and tape		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
20			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
21	Plaster with finish		PLM <input type="checkbox"/>	TEM <input checked="" type="checkbox"/>
22			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
23	Brown large square pattern ↓		PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
24			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
25			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
26			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
27			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
28			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
29			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>
30			PLM <input checked="" type="checkbox"/>	TEM <input type="checkbox"/>



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





Photo 1 -- 702 Saxon Avenue in Spartanburg, SC.



Photo 2 – Roof shingles and no felt & 2 chimneys with mastic/tar assumed positive.



Photo 3 – Cement board siding with felt paper and unfinished drywall beneath.



Photo 4 – Wooden window caulk.



Photo 5 – Wooden window glazing.



Photo 6 – Vinyl window caulk.



Photo 7 – Top layer of drywall with joint compound & tape in the living room.



Photo 8 – Plaster with finish over unfinished drywall throughout.



Photo 9 – Brown large square pattern vinyl floor with no mastic in the kitchen.

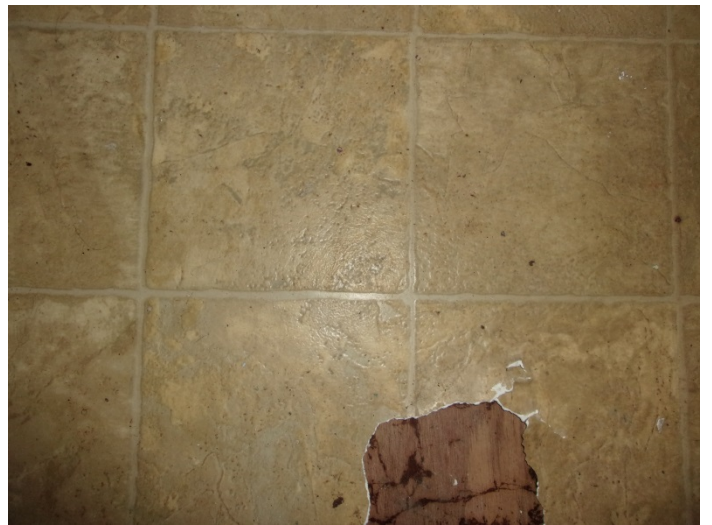


Photo 10 – Beige medium square pattern vinyl floor with no mastic in the bathroom.



Photo 11 – Tan pattern vinyl floor with mastic under wood in the kitchen.

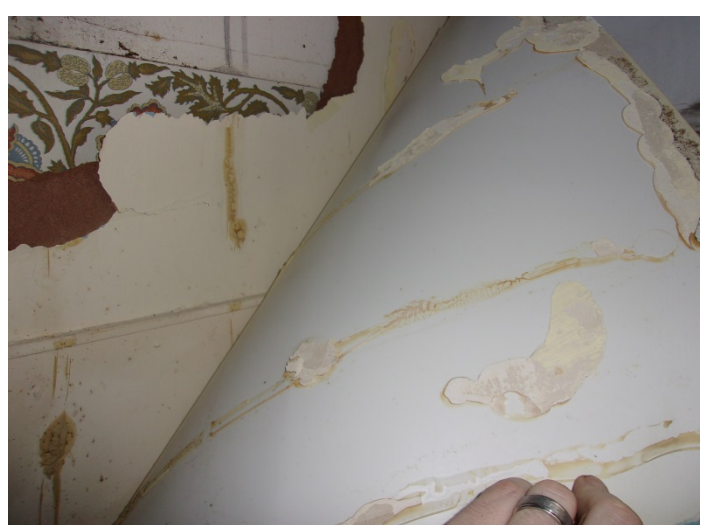


Photo 12 – Mastic beneath shower stall.

**SECTION V**

**SC DHEC Asbestos Inspector License**

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**SCDHEC ISSUED**  
Asbestos ID Card

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**John Oliver**



Expiration Date

<b>AIRSAMPLER</b>	<b>AS-00486</b>	<b>03/17/18</b>
<b>CONSULTBI</b>	<b>BI-01528</b>	<b>03/22/18</b>