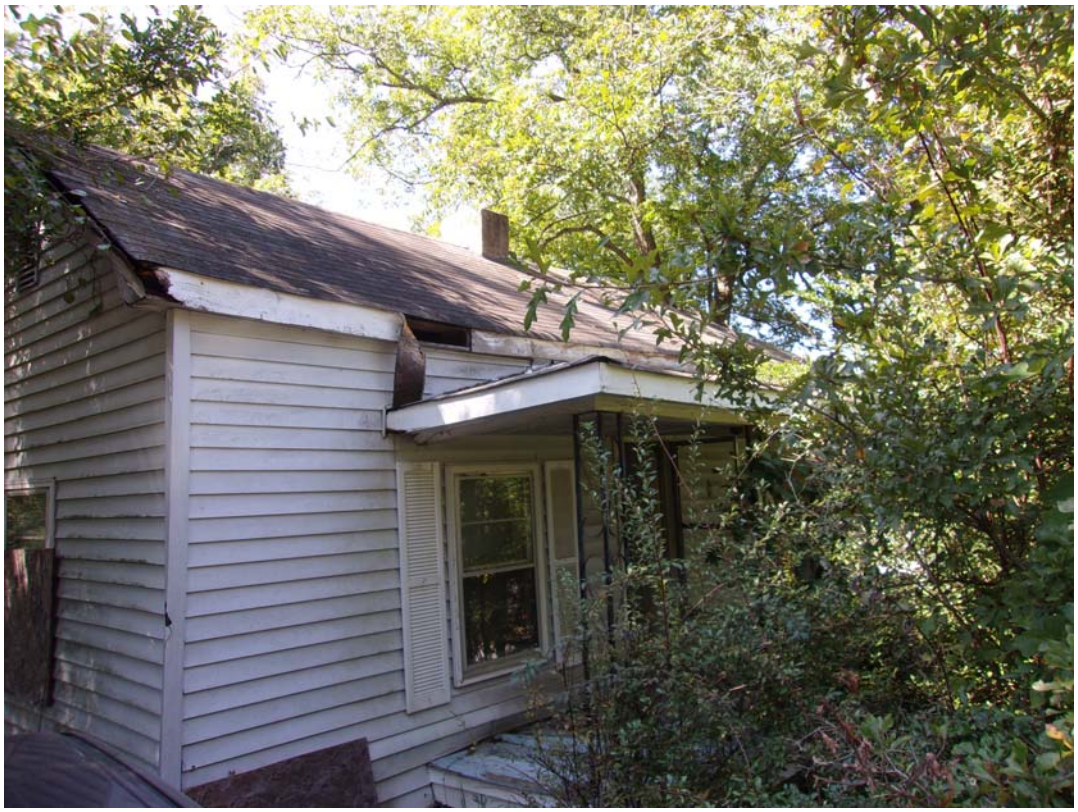

Asbestos & Lead Based Paint Assessment

City of Spartanburg
665 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

November 3, 2017

PEX
Environmental
Management

Environmental Management

7 Winchester Court
Mauldin, SC 29662
864.404.3210 office
864.404.3213 fax
www.apex-ehs.com

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Apex Project Number 0417-66

November 3, 2017

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

Reference: Asbestos and Lead-Based Paint Assessment Services
665 Saxon Avenue
Spartanburg, South Carolina

Dear Mr. Tillerson:

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

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

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

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

Respectfully submitted,
APEX ENVIRONMENTAL MANAGEMENT, INC.

Tom Oliver
Director of Operations

Appendices

ASBESTOS AND LEAD BASED PAINT ASSESSMENT

CITY OF SPARTANBURG
665 SAXON AVENUE
SPARTANBURG, SOUTH CAROLINA

APEX PROJECT NO. 0417-66

TABLE OF CONTENTS

SECTION

SECTION I

Asbestos & Lead Evaluation Report

ASBESTOS EVALUATION REPORT
APEX PROJECT NUMBER: 0417-66

Date:	11/3/2017	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:	665 Saxon Avenue Spartanburg, SC		
Assessor:	Ted Shultz	Date of Assessment:	9/27/2017
Company:	Apex Environmental Management 7 Winchester Court Mauldin, SC 29662	Phone Number:	(864) 404-3210
Purpose of Assessment:	Demolition	Age of Structure:	Approximately 110 years
Building Type:	Residential	Number of Stories:	1
Foundation:	Crawlspace	Approximate Square Footage	725 SF

EXTERIOR BUILDING MATERIALS

- Pitched wooden roof with shingles & felt.
- Wooden doors with no caulk.
- Wooden windows with glazing.
- Vinyl siding over wood. Asphalt shingle siding exists beneath a portion of the vinyl siding.
- Roof/chimney mastic on 1 chimney – assumed positive.
- An exterior shed exists. The construction materials & finishes include: a metal roof with sealant, asphalt shingle siding over wood, wooden walls, ceilings & floors.

INTERIOR BUILDING MATERIALS

- Popcorn ceiling texture over drywall throughout
- Drywall with joint compound & tape throughout.
- Wooden wall panels over bead board.
- Caulk on the bathroom shower stall.
- Carpet over wooden floors.
- Multiple types of vinyl flooring with 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 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 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). Nineteen (19) 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. 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 6 LF of chimney mastic/tar on 1 chimney – assumed positive.

Lead Based Paint

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

Currently, SCDHEC defines LBP as paint containing in excess of, or equal to, 1.0 mg/cm^2. The laboratory analytical results and chain-of-custody are included in the LBP Analysis Report in Appendix II. The approximate locations of the paint samples collected and analytical results are presented in the *LBP Data Table* included with this report.

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

- Exterior white wooden roof trim.
- Interior bead board walls with multiple colors throughout.

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 mg/ 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 ($\mu g/m^3$) 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
PLM & TEM ANALYSIS

Project Name: COS 665 Saxon Avenue ACM/LBP

Sampled By: Tom Oliver

Project Location: 665 Saxon Avenue, Spartanburg, South Carolina

Project Manager: Tom Oliver

Project Number: 0417-66

Date: 9/27/2017

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
1	Throughout	Popcorn ceiling texture	PLM - NAD	Friable	Good	645 SF
2						
3						
4	Throughout	Drywall with joint compound & tape	PLM - NAD	Friable	Good	1,200 SF
5						
6						
7						
8						
9	Bathroom	Shower stall caulk	PLM - NAD	Non-Friable	Good	20 LF
10						
11			TEM - NAD			
12	Living room - patch	Grey square pattern vinyl flooring with no mastic	PLM - NAD	Non-Friable	Good	50 SF
13						
14			TEM - NAD			
15	Living room - patch	Yellow octagon pattern vinyl flooring with mastic	PLM - NAD	Non-Friable	Good	215 SF
16						
17			TEM - NAD			
18	Hallway	Brown square pattern vinyl flooring with mastic	PLM - NAD	Non-Friable	Good	40 SF
19						
20			TEM - NAD			
21	Bathroom	12" x 12" grey self-stick vinyl floor tile	PLM - NAD	Non-Friable	Good	20 SF
22						
23			TEM - NAD			

ASBESTOS SURVEY FIELD DATA SHEET
PLM & TEM ANALYSIS

Project Name: COS 665 Saxon Avenue ACM/LBP
Sampled By: Tom Oliver

Project Location: 665 Saxon Avenue, Spartanburg, South Carolina
Project Manager: Tom Oliver

Project Number: 0417-66
Date: 9/27/2017

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
24	Kitchen	Yellow large square pattern vinyl flooring with mastic	PLM - NAD	Non-Friable	Good	165 SF
25						
26			TEM - NAD			
27	Bedroom	Thatch pattern vinyl flooring with mastic	PLM - NAD	Non-Friable	Good	195 SF
28						
29			TEM - NAD			
30	House roof	Roof shingles (2 layers) and felt (1 layer)	PLM - NAD	Non-Friable	Good	800 SF
31						
32			TEM - NAD			
33	House wooden windows	Window glazing	PLM - NAD	Non-Friable	Good	7 EA
34						
35			TEM - NAD			
36	Exterior shed roof	Metal roof sealant	PLM - NAD	Non-Friable	Good	125 SF
37						
38			TEM - NAD			
39	House siding	Asphalt shingle siding under vinyl siding	PLM - NAD	Non-Friable	Good	800 SF
40						
41			TEM - NAD			
42	Exterior shed siding	Asphalt shingle siding	PLM - NAD	Non-Friable	Good	150 SF
43						
44			TEM - NAD			
Assumed	**Chimney/roof**	**Chimney mastic on 1 chimney**	**Assumed**	**Non-Friable**	**Good**	**6 LF**

NAD = No Asbestos Detected
Bold = Positive For Asbestos
LF = Linear Feet
SF = Square Feet
EA = Each
Chry = Chrysotile
Amos = Amosite

FIELD DATA SHEET
LBP ANALYSIS

Project Name: COS 665 Saxon Avenue ACM/LBP

Sampled By: Tom Oliver

Project Location: 665 Saxon Avenue, Spartanburg, South Carolina

Project Manager: Tom Oliver

Project Number: 0417-66

Date: 9/27/2017

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result (mg/m^3)
77	Porch	Floor	Green	Wood	0.00
78	Porch	Window Frame	White	Wood	0.00
79	Porch	Window	White	Wood	0.00
80	Porch	Door Frame	White	Wood	0.64
81	Porch	Door	White	Wood	0.00
82	Porch	Ceiling	White	Wood	0.58
83	**Porch**	**Roof Trim**	**White**	**Wood**	**2.24**
84	Exterior	Siding	White	Vinyl	0.00
85	Exterior	Foundation	Grey	CMU Block	0.01
86	**Living Room**	**Wall**	**Grey**	**Bead Board**	**3.61**
87	Living Room	Window	White	Wood	0.00
88	Living Room	Window Sill	White	Wood	0.00
89	Living Room	Base Board	White	Wood	0.00
90	Living Room	Crown Molding	White	Wood	0.00
91	Living Room	Door Frame	White	Wood	0.00
92	Living Room	Door	White	Wood	0.00
93	Hallway	Wall	Tan	Drywall	0.00
94	Kitchen	Cabinet	Brown	Wood	0.00
95	**Bedroom**	**Wall**	**Pink**	**Bead Board**	**1.04**
96	Bedroom	Wall	White	Drywall	0.00
97	Calibration				1.06
98	Calibration				1.07
99	Calibration				1.08

Bold = LBP

SECTION III

Laboratory Analytical Results

October 3, 2017

Apex Environmental Management
7 Winchester Court
Mauldin, SC 29662

CLIENT PROJECT: COS 665 Saxon Ave ACM/LBP; 0417-66
CEI LAB CODE: A17-13769

Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on September 28, 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,

Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP TESTING
NVLAP LAB CODE 101768-0

ASBESTOS ANALYTICAL REPORT
By: Polarized Light Microscopy

Prepared for

Apex Environmental Management

CLIENT PROJECT: COS 665 Saxon Ave ACM/LBP; 0417-66

CEI LAB CODE: A17-13769

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

REPORT DATE: 10/03/17

TOTAL SAMPLES ANALYZED: 32

SAMPLES >1% ASBESTOS:

TEL: 866-481-1412

www.ceilabs.com

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: COS 665 Saxon Ave ACM/LBP; 0417-66 **CEI LAB CODE:** A17-13769

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

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
1		A2507767	White	Ceiling Texture	None Detected
2		A2507768	White	Ceiling Texture	None Detected
3		A2507769	White	Ceiling Texture	None Detected
4	Layer 1	A2507770	White	Drywall	None Detected
	Layer 2	A2507770	White	Joint Compound	None Detected
	Layer 3	A2507770	Cream	Tape	None Detected
5	Layer 1	A2507771	White	Drywall	None Detected
	Layer 2	A2507771	White	Joint Compound	None Detected
	Layer 3	A2507771	Cream	Tape	None Detected
6	Layer 1	A2507772	White	Drywall	None Detected
	Layer 2	A2507772	White	Joint Compound	None Detected
	Layer 3	A2507772	Cream	Tape	None Detected
7	Layer 1	A2507773	White	Drywall	None Detected
	Layer 2	A2507773	White	Joint Compound	None Detected
	Layer 3	A2507773	Cream	Tape	None Detected
8	Layer 1	A2507774	White	Drywall	None Detected
	Layer 2	A2507774	White	Joint Compound	None Detected
	Layer 3	A2507774	Cream	Tape	None Detected
9		A2507775	Cream	Shower Stall Caulk	None Detected
10		A2507776	Cream	Shower Stall Caulk	None Detected
11		A2507777		Sample Submitted for TEM Analysis	
12		A2507778	Gray,Square Pattern	Vinyl Flooring	None Detected
13		A2507779	Gray,Square Pattern	Vinyl Flooring	None Detected
14		A2507780		Sample Submitted for TEM Analysis	
15	Layer 1	A2507781	Yellow,Octagon Pattern	Vinyl Flooring	None Detected
	Layer 2	A2507781	Tan	Mastic	None Detected
16	Layer 1	A2507782	Yellow,Octagon Pattern	Vinyl Flooring	None Detected

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: COS 665 Saxon Ave ACM/LBP; 0417-66 **CEI LAB CODE:** A17-13769

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

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
	Layer 2	A2507782	Tan	Mastic	None Detected
17		A2507783		Sample Submitted for TEM Analysis	
18	Layer 1	A2507784	Brown,Square Pattern	Vinyl Flooring	None Detected
	Layer 2	A2507784	Tan	Mastic	None Detected
19	Layer 1	A2507785	Brown,Square Pattern	Vinyl Flooring	None Detected
	Layer 2	A2507785	Tan	Mastic	None Detected
20		A2507786		Sample Submitted for TEM Analysis	
21		A2507787A	Gray	Self Stick Floor Tile	None Detected
		A2507787B	Tan	Mastic	None Detected
22		A2507788A	Gray	Self Stick Floor Tile	None Detected
		A2507788B	Tan	Mastic	None Detected
23		A2507789		Sample Submitted for TEM Analysis	
24	Layer 1	A2507790	Yellow,Large Square Pattern	Vinyl Flooring	None Detected
	Layer 2	A2507790	Tan	Mastic	None Detected
25	Layer 1	A2507791	Yellow,Large Square Pattern	Vinyl Flooring	None Detected
	Layer 2	A2507791	Tan	Mastic	None Detected
26		A2507792		Sample Submitted for TEM Analysis	
27	Layer 1	A2507793	Yellow/Brown, Thatch Pattern	Vinyl Flooring	None Detected
	Layer 2	A2507793	Tan	Mastic	None Detected
28	Layer 1	A2507794	Yellow/Brown, Thatch Pattern	Vinyl Flooring	None Detected
	Layer 2	A2507794	Tan	Mastic	None Detected
29		A2507795		Sample Submitted for TEM Analysis	
30	Layer 1	A2507796A	Gray/Black	Roof Shingle	None Detected

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: COS 665 Saxon Ave ACM/LBP; 0417-66 **CEI LAB CODE:** A17-13769

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

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
	Layer 2	A2507796A	Black	Roof Shingle	None Detected
		A2507796B	Black	Felt Paper	None Detected
31	Layer 1	A2507797A	Gray/Black	Roof Shingle	None Detected
	Layer 2	A2507797A	Black	Roof Shingle	None Detected
		A2507797B	Black	Felt Paper	None Detected
32		A2507798		Sample Submitted for TEM Analysis	
33		A2507799	White/Tan	Window Glazing	None Detected
34		A2507800	White/Tan	Window Glazing	None Detected
35		A2507801		Sample Submitted for TEM Analysis	
36	Layer 1	A2507802	Black/Tan	Metal Roof Sealant	None Detected
	Layer 2	A2507802	Silver	Metal Roof Sealant	None Detected
37	Layer 1	A2507803	Black/Tan	Metal Roof Sealant	None Detected
	Layer 2	A2507803	Silver	Metal Roof Sealant	None Detected
38		A2507804		Sample Submitted for TEM Analysis	
39		A2507805	Tan/Red/Gray	Asphalt Shingle Siding	None Detected
40		A2507806	Tan/Red/Gray	Asphalt Shingle Siding	None Detected
41		A2507807		Sample Submitted for TEM Analysis	
42		A2507808	White/Black	Asphalt Shingle Siding	None Detected
43		A2507809	White/Black	Asphalt Shingle Siding	None Detected
44		A2507810		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: A17-13769
Date Received: 09-28-17
Date Analyzed: 10-02-17
Date Reported: 10-03-17

Project: COS 665 Saxon Ave ACM/LBP; 0417-66

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
1 A2507767	Ceiling Texture	Heterogeneous White Fibrous Bound	2%	Cellulose	90% 8%	Binder Vermiculite	None Detected
2 A2507768	Ceiling Texture	Heterogeneous White Fibrous Bound	2%	Cellulose	90% 8%	Binder Vermiculite	None Detected
3 A2507769	Ceiling Texture	Heterogeneous White Fibrous Bound	2%	Cellulose	90% 8%	Binder Vermiculite	None Detected
4 Layer 1 A2507770	Drywall	Heterogeneous White Fibrous Bound	15%	Cellulose	85%	Gypsum	None Detected
Layer 2 A2507770	Joint Compound	Heterogeneous White Fibrous Bound	2%	Cellulose	8% 90%	Paint Calc Carb	None Detected
Layer 3 A2507770	Tape	Heterogeneous Cream Fibrous Bound	100%	Cellulose			None Detected
5 Layer 1 A2507771	Drywall	Heterogeneous White Fibrous Bound	15%	Cellulose	85%	Gypsum	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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

CEI Lab Code: A17-13769
Date Received: 09-28-17
Date Analyzed: 10-02-17
Date Reported: 10-03-17

Project: COS 665 Saxon Ave ACM/LBP; 0417-66

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
Layer 2 A2507771	Joint Compound	Heterogeneous White Fibrous Bound	2%	Cellulose	8% 90%	Paint Calc Carb	None Detected
Layer 3 A2507771	Tape	Heterogeneous Cream Fibrous Bound	100%	Cellulose			None Detected
6 Layer 1 A2507772	Drywall	Heterogeneous White Fibrous Bound	15%	Cellulose	85%	Gypsum	None Detected
Layer 2 A2507772	Joint Compound	Heterogeneous White Fibrous Bound	2%	Cellulose	8% 90%	Paint Calc Carb	None Detected
Layer 3 A2507772	Tape	Heterogeneous Cream Fibrous Bound	100%	Cellulose			None Detected
7 Layer 1 A2507773	Drywall	Heterogeneous White Fibrous Bound	15%	Cellulose	85%	Gypsum	None Detected
Layer 2 A2507773	Joint Compound	Heterogeneous White Fibrous Bound	2%	Cellulose	8% 90%	Paint Calc Carb	None Detected

ASBESTOS BULK ANALYSIS

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Project: COS 665 Saxon Ave ACM/LBP; 0417-66

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
Layer 3 A2507773	Tape	Heterogeneous Cream Fibrous Bound	100%	Cellulose			None Detected
8 Layer 1 A2507774	Drywall	Heterogeneous White Fibrous Bound	15%	Cellulose	85%	Gypsum	None Detected
Layer 2 A2507774	Joint Compound	Heterogeneous White Fibrous Bound	2%	Cellulose	8% 90%	Paint Calc Carb	None Detected
Layer 3 A2507774	Tape	Heterogeneous Cream Fibrous Bound	100%	Cellulose			None Detected
9 A2507775	Shower Stall Caulk	Heterogeneous Cream Fibrous Bound	2%	Cellulose	98%	Caulk	None Detected
10 A2507776	Shower Stall Caulk	Heterogeneous Cream Fibrous Bound	2%	Cellulose	98%	Caulk	None Detected
11 A2507777	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: A17-13769
Date Received: 09-28-17
Date Analyzed: 10-02-17
Date Reported: 10-03-17

Project: COS 665 Saxon Ave ACM/LBP; 0417-66

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
12 A2507778	Vinyl Flooring	Heterogeneous Gray,Square Pattern Fibrous Bound	25%	Cellulose	50% 25%	Vinyl Binder	None Detected
Lab Notes: No Mastic present in the sample.							
13 A2507779	Vinyl Flooring	Heterogeneous Gray,Square Pattern Fibrous Bound	25%	Cellulose	50% 25%	Vinyl Binder	None Detected
Lab Notes: No Mastic present in the sample.							
14 A2507780	Sample Submitted for TEM Analysis						
15 Layer 1 A2507781	Vinyl Flooring	Heterogeneous Yellow,Octagon Pattern Fibrous Bound	25%	Cellulose	50% 25%	Vinyl Binder	None Detected
Layer 2 A2507781	Mastic	Homogeneous Tan Fibrous Bound	5%	Cellulose	60% 35%	Mastic Calc Carb	None Detected
16 Layer 1 A2507782	Vinyl Flooring	Heterogeneous Yellow,Octagon Pattern Fibrous Bound	25%	Cellulose	50% 25%	Vinyl Binder	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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

CEI Lab Code: A17-13769
Date Received: 09-28-17
Date Analyzed: 10-02-17
Date Reported: 10-03-17

Project: COS 665 Saxon Ave ACM/LBP; 0417-66

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		 Non-Fibrous		ASBESTOS %
Layer 2 A2507782	Mastic	Homogeneous Tan Fibrous Bound	5%	Cellulose	60% 35%	Mastic Calc Carb	None Detected
17 A2507783	Sample Submitted for TEM Analysis						
18 Layer 1 A2507784	Vinyl Flooring	Heterogeneous Brown,Square Pattern Fibrous Bound	25%	Cellulose	50% 25%	Vinyl Binder	None Detected
Layer 2 A2507784	Mastic	Homogeneous Tan Fibrous Bound	5%	Cellulose	60% 35%	Mastic Calc Carb	None Detected
19 Layer 1 A2507785	Vinyl Flooring	Heterogeneous Brown,Square Pattern Fibrous Bound	25%	Cellulose	50% 25%	Vinyl Binder	None Detected
Layer 2 A2507785	Mastic	Homogeneous Tan Fibrous Bound	5%	Cellulose	60% 35%	Mastic Calc Carb	None Detected
20 A2507786	Sample Submitted for TEM Analysis						
21 A2507787A	Self Stick Floor Tile	Heterogeneous Gray Fibrous Bound	2%	Cellulose	60% 38%	Vinyl Binder	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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

CEI Lab Code: A17-13769
Date Received: 09-28-17
Date Analyzed: 10-02-17
Date Reported: 10-03-17

Project: COS 665 Saxon Ave ACM/LBP; 0417-66

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
A2507787B	Mastic	Homogeneous Tan Fibrous Bound	5%	Cellulose	60% 35%	Mastic Calc Carb	None Detected
22 A2507788A	Self Stick Floor Tile	Heterogeneous Gray Fibrous Bound	2%	Cellulose	60% 38%	Vinyl Binder	None Detected
A2507788B	Mastic	Homogeneous Tan Fibrous Bound	5%	Cellulose	60% 35%	Mastic Calc Carb	None Detected
23 A2507789	Sample Submitted for TEM Analysis						
24 Layer 1 A2507790	Vinyl Flooring	Heterogeneous Yellow,Large Square Pattern Fibrous Bound	15% 10%	Cellulose Fiberglass	50% 25%	Vinyl Binder	None Detected
Layer 2 A2507790	Mastic	Homogeneous Tan Fibrous Bound	5%	Cellulose	60% 35%	Mastic Calc Carb	None Detected
25 Layer 1 A2507791	Vinyl Flooring	Heterogeneous Yellow,Large Square Pattern Fibrous Bound	15% 10%	Cellulose Fiberglass	50% 25%	Vinyl Binder	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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

CEI Lab Code: A17-13769
Date Received: 09-28-17
Date Analyzed: 10-02-17
Date Reported: 10-03-17

Project: COS 665 Saxon Ave ACM/LBP; 0417-66

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
Layer 2 A2507791	Mastic	Homogeneous Tan Fibrous Bound	5%	Cellulose	60% 35%	Mastic Calc Carb	None Detected
26 A2507792	Sample Submitted for TEM Analysis						
27 Layer 1 A2507793	Vinyl Flooring	Heterogeneous Yellow/Brown, Thatch Pattern Fibrous Bound	15% 10%	Cellulose Fiberglass	50% 25%	Vinyl Binder	None Detected
Layer 2 A2507793	Mastic	Homogeneous Tan Fibrous Bound	5%	Cellulose	60% 35%	Mastic Calc Carb	None Detected
28 Layer 1 A2507794	Vinyl Flooring	Heterogeneous Yellow/Brown, Thatch Pattern Fibrous Bound	15% 10%	Cellulose Fiberglass	50% 25%	Vinyl Binder	None Detected
Layer 2 A2507794	Mastic	Homogeneous Tan Fibrous Bound	5%	Cellulose	60% 35%	Mastic Calc Carb	None Detected
29 A2507795	Sample Submitted for TEM Analysis						
30 Layer 1 A2507796A	Roof Shingle	Heterogeneous Gray/Black Fibrous Bound	25%	Fiberglass	10% 55% 10%	Gravel Tar Silicates	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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

CEI Lab Code: A17-13769
Date Received: 09-28-17
Date Analyzed: 10-02-17
Date Reported: 10-03-17

Project: COS 665 Saxon Ave ACM/LBP; 0417-66

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		 Non-Fibrous		ASBESTOS %
Layer 2 A2507796A	Roof Shingle	Heterogeneous Black Fibrous Bound	25%	Fiberglass	10% 55% 10%	Gravel Tar Silicates	None Detected
A2507796B	Felt Paper	Homogeneous Black Fibrous Bound	65%	Cellulose	35%	Tar	None Detected
31 Layer 1 A2507797A	Roof Shingle	Heterogeneous Gray/Black Fibrous Bound	25%	Fiberglass	10% 55% 10%	Gravel Tar Silicates	None Detected
Layer 2 A2507797A	Roof Shingle	Heterogeneous Black Fibrous Bound	25%	Fiberglass	10% 55% 10%	Gravel Tar Silicates	None Detected
A2507797B	Felt Paper	Homogeneous Black Fibrous Bound	65%	Cellulose	35%	Tar	None Detected
32 A2507798	Sample Submitted for TEM Analysis						
33 A2507799	Window Glazing	Heterogeneous White/Tan Fibrous Bound	2%	Cellulose	8% 90%	Paint Binder	None Detected
34 A2507800	Window Glazing	Heterogeneous White/Tan Fibrous Bound	2%	Cellulose	8% 90%	Paint Binder	None Detected

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

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

CEI Lab Code: A17-13769
Date Received: 09-28-17
Date Analyzed: 10-02-17
Date Reported: 10-03-17

Project: COS 665 Saxon Ave ACM/LBP; 0417-66

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID / Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		Non-Fibrous		ASBESTOS %
35 A2507801	Sample Submitted for TEM Analysis						
36 Layer 1 A2507802	Metal Roof Sealant	Heterogeneous Black/Tan Fibrous Bound	2%	Cellulose	98%	Binder	None Detected
Layer 2 A2507802	Metal Roof Sealant	Heterogeneous Silver Non-fibrous Bound			100%	METAL	None Detected
37 Layer 1 A2507803	Metal Roof Sealant	Heterogeneous Black/Tan Fibrous Bound	2%	Cellulose	98%	Binder	None Detected
Layer 2 A2507803	Metal Roof Sealant	Heterogeneous Silver Non-fibrous Bound			100%	METAL	None Detected
38 A2507804	Sample Submitted for TEM Analysis						
39 A2507805	Asphalt Shingle Siding	Heterogeneous Tan/Red/Gray Fibrous Bound	30%	Cellulose	10% 60%	Gravel Tar	None Detected
40 A2507806	Asphalt Shingle Siding	Heterogeneous Tan/Red/Gray Fibrous Bound	30%	Cellulose	10% 60%	Gravel Tar	None Detected
41 A2507807	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: A17-13769
Date Received: 09-28-17
Date Analyzed: 10-02-17
Date Reported: 10-03-17

Project: COS 665 Saxon Ave ACM/LBP; 0417-66

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS Fibrous		 Non-Fibrous		ASBESTOS %
42 A2507808	Asphalt Shingle Siding	Heterogeneous White/Black Fibrous Bound	65%	Cellulose	10% 25%	Gravel Tar	None Detected
43 A2507809	Asphalt Shingle Siding	Heterogeneous White/Black Fibrous Bound	65%	Cellulose	10% 25%	Gravel Tar	None Detected
44 A2507810	Sample Submitted for 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

REPORTING LIMIT FOR POINT COUNTS: 0.25% by 400 Points or 0.1% by 1,000 Points

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: Shilpa Ladekar

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

NVLAP TESTING
NVLAP LAB CODE 101768-0

(44) AM-13.769
A2507767
A2507810

ASBESTOS CHAIN OF CUSTODY

CEI LABS
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: Tom Oliver
Company: Apex Environmental Management, Inc.	Email / Tel: toliver@apex-ehs.com
Address: 7 Winchester Court	Project Name: COS 665 Saxon Ave ACM/LBP
Mauldin, South Carolina 29662	Project ID# 0417-66
Email: toliver@apex-ehs.com	PO #:
Tel: 864-404-3210 Fax: 864-404-3213	STATE SAMPLES COLLECTED IN: South Carolina

GENERAL INSTRUCTIONS			
POSITIVE STOP ANALYSIS	☒	PLM DUE DATE:	/ /
ANALYZE NOB'S BY TEM	☒	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	☐	☐	☐	☐	☐	☒
PLM POINT COUNT (400)	EPA 600	☐	☐	☐	☐	☐	☐
PLM POINT COUNT (1000)	EPA 600	☐	☐	☐	☐	☐	☐
PLM GRAV w POINT COUNT	EPA 600		☐	☐	☐	☐	☐
PCM AIR	NIOSH 7400	☐	☐	☐	☐	☐	☐
TEM AIR AHERA	EPA AHERA	☐	☐	☐	☐	☐	☐
TEM AIR NIOSH	NIOSH 7402	☐	☐	☐	☐	☐	☐
TEM BULK	CHATFIELD		☐	☐	☐	☐	☒
TEM DUST WIPE	ASTM D6480-05	☐	☐	☐	☐	☐	☐
TEM DUST MICROVAC	ASTM D5755-09	☐	☐	☐	☐	☐	☐
TEM SOIL	ASTM D7521-13			☐	☐	☐	☐
TEM VERMICULITE	CINCINNATI METHOD			☐	☐	☐	☐
OTHER:		☐	☐	☐	☐	☐	☐

REMARKS: Utilize Positive Stop During Analysis

☑ Accept Samples
☐ Reject Samples

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	9-27-17	DE	9-28 9:00

Samples will be disposed of 30 days after analysis

17-13769

ASBESTOS SAMPLING FORM

CEI LABS

COMPANY CONTACT INFORMATION	
Company: Apex Environmental Management, Inc.	Job Contact: Tom Oliver
Project Name: COS 665 Saxon Ave ACM/LBP	
Project ID #: 0417-66	Tel: 864-640-5127

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
1	Popcorn ceiling texture		PLM ☑	TEM ☐
2			PLM ☑	TEM ☐
3			PLM ☑	TEM ☐
4	Drywall w/ JC +		PLM ☑	TEM ☐
5	tape		PLM ☑	TEM ☐
6			PLM ☑	TEM ☐
7			PLM ☑	TEM ☐
8			PLM ☑	TEM ☐
9	Shower stall caulk		PLM ☑	TEM ☐
10			PLM ☑	TEM ☐
11			PLM ☐	TEM ☑
12	Grey square pattern		PLM ☑	TEM ☐
13	vinyl floor w/ mastic		PLM ☑	TEM ☐
14			PLM ☐	TEM ☑
15	Yellow Octagon Pattern		PLM ☑	TEM ☐
16	vinyl floor w/ mastic		PLM ☑	TEM ☐
17			PLM ☐	TEM ☑
18	Brown square pattern		PLM ☑	TEM ☐
19	vinyl floor w/ mastic		PLM ☑	TEM ☐
20			PLM ☐	TEM ☑
21	12"x12" grey self-		PLM ☑	TEM ☐
22	stick floor tile		PLM ☑	TEM ☐
23			PLM ☐	TEM ☑
24	Yellow large square		PLM ☑	TEM ☐
25	pattern vinyl floor w/		PLM ☑	TEM ☐
26	mastic		PLM ☐	TEM ☑
27	Thatch pattern vinyl		PLM ☑	TEM ☐
28	floor w/ mastic		PLM ☑	TEM ☐
29			PLM ☐	TEM ☑
30			PLM ☐	TEM ☐

AM.13.769

ASBESTOS SAMPLING FORM

CEI LABS

COMPANY CONTACT INFORMATION	
Company: Apex Environmental Management, Inc.	Job Contact: Tom Oliver
Project Name: COS 665 Saxon Ave ACM/LBP	
Project ID #: 0417-66	Tel: 864-640-5127

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
30	Roof shingles (2) & felt (1)		PLM ☑	TEM ☐
31			PLM ☑	TEM ☐
32			PLM ☐	TEM ☑
33	Window glazing		PLM ☑	TEM ☐
34			PLM ☑	TEM ☐
35			PLM ☐	TEM ☑
36	Metal roof sealant		PLM ☑	TEM ☐
37			PLM ☑	TEM ☐
38			PLM ☐	TEM ☑
39	Asphalt shingle siding under vinyl - house		PLM ☑	TEM ☐
40			PLM ☑	TEM ☐
41			PLM ☐	TEM ☑
42	Asphalt shingle siding - shed		PLM ☑	TEM ☐
43			PLM ☑	TEM ☐
44			PLM ☐	TEM ☑
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
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			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐

October 9, 2017

Apex Environmental Management
7 Winchester Court
Mauldin, SC 29662

CLIENT PROJECT: COS 665 Saxon Ave ACM/LBP;0417-66
CEI LAB CODE: T17-2109

Dear Customer:

Enclosed are asbestos analysis results for TEM bulk samples received at our laboratory on October 2, 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,

Tianbao Bai, Ph.D., CIH
Laboratory Director

ASBESTOS ANALYTICAL REPORT
By: Transmission Electron Microscopy

Prepared for

Apex Environmental Management

CLIENT PROJECT: COS 665 Saxon Ave ACM/LBP;0417-66

CEI LAB CODE: T17-2109

TEST METHOD: Bulk Chatfield
EPA 600 / R93 / 116

REPORT DATE: 10/09/17

TEL: 866-481-1412

www.ceilabs.com

ASBESTOS BULK ANALYSIS

By: TRANSMISSION ELECTRON MICROSCOPY

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

CEI Lab Code: T17-2109
Date Received: 10-02-17
Date Analyzed: 10-06-17
Date Reported: 10-09-17

Project: COS 665 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 %
11 T68769	Cream Shower Caulk	0.572	27.3	68	4.7	**None Detected**
14 T68770	Gray Vinyl Flooring	0.29	61.7	29.3	9	**None Detected**
17 T68771	Yellow Vinyl Flooring	0.356	77	17.4	5.6	**None Detected**
17 T68772	Tan Mastic	0.108	39.8	7.4	52.8	**None Detected**
20 T68773	Brown Vinyl Flooring	0.301	61.1	4.3	34.6	**None Detected**
20 T68774	Tan Mastic	0.264	37.1	2.7	60.2	**None Detected**
23 T68775	Gray Floor Tile	0.202	25.7	70.8	3.5	**None Detected**
23 T68776	Tan Mastic	0.11	78.2	10.9	10.9	**None Detected**
26 T68777	Yellow Vinyl Flooring	0.237	77.2	19.4	3.4	**None Detected**
26 T68778	Tan Mastic	0.173	34.7	39.9	25.4	**None Detected**
29 T68779	Yellow/Brown Vinyl Flooring	0.201	63.2	8	28.8	**None Detected**
29 T68780	Tan Mastic	0.116	44	6.9	49.1	**None Detected**

ASBESTOS BULK ANALYSIS

By: TRANSMISSION ELECTRON MICROSCOPY

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

CEI Lab Code: T17-2109
Date Received: 10-02-17
Date Analyzed: 10-06-17
Date Reported: 10-09-17

Project: COS 665 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 %
32 T68781	Gray/Black Shingle	0.533	24.4	37.3	38.3	**None Detected**
32 T68782	Black Shingle	0.423	23.4	37.8	38.8	**None Detected**
32 T68783	Black Felt Paper	0.527	94.9	.9	4.2	**None Detected**
35 T68784	White Window Glazing	0.539	13.2	82	4.8	**None Detected**
38 T68785	Black/Tan Metal Roof Sealant	0.464	14.4	4.5	81.1	**None Detected**
No silver metal roof sealant left for TEM analysis.						
41 T68786	Asphalt Shingle	0.709	51.6	11	37.4	**None Detected**
44 T68787	White/Black Shingle	0.728	53.7	15	31.3	**None Detected**

LEGEND: None

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: Jennifer Turner

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

T17-2109 (19)
T68769-787
LEC

(44) AM-13.769
A2507767
A2507810

ASBESTOS CHAIN OF CUSTODY

CEI LABS

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: Tom Oliver
Company: Apex Environmental Management, Inc.	Email / Tel: toliver@apex-ehs.com
Address: 7 Winchester Court	Project Name: COS 665 Saxon Ave ACM/LBP
Mauldin, South Carolina 29662	Project ID# 0417-66
Email: toliver@apex-ehs.com	PO #:
Tel: 864-404-3210 Fax: 864-404-3213	STATE SAMPLES COLLECTED IN: South Carolina

GENERAL INSTRUCTIONS			
POSITIVE STOP ANALYSIS	☒	PLM DUE DATE:	/ /
ANALYZE NOB'S BY TEM	☒	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	☐	☐	☐	☐	☐	☒
PLM POINT COUNT (400)	EPA 600	☐	☐	☐	☐	☐	☐
PLM POINT COUNT (1000)	EPA 600	☐	☐	☐	☐	☐	☐
PLM GRAV w POINT COUNT	EPA 600		☐	☐	☐	☐	☐
PCM AIR	NIOSH 7400	☐	☐	☐	☐	☐	☐
TEM AIR AHERA	EPA AHERA	☐	☐	☐	☐	☐	☐
TEM AIR NIOSH	NIOSH 7402	☐	☐	☐	☐	☐	☐
TEM BULK	CHATFIELD		☐	☐	☐	☐	☒
TEM DUST WIPE	ASTM D6480-05	☐	☐	☐	☐	☐	☐
TEM DUST MICROVAC	ASTM D5755-09	☐	☐	☐	☐	☐	☐
TEM SOIL	ASTM D7521-13			☐	☐	☐	☐
TEM VERMICULITE	CINCINNATI METHOD			☐	☐	☐	☐
OTHER:		☐	☐	☐	☐	☐	☐

REMARKS: Utilize Positive Stop During Analysis

☑ Accept Samples
☐ Reject Samples

Relinquished By:	Date/Time	Received By:	Date/Time
	9-27-17	DE	9-28 9:00
	10/02/17 10:10 am		

Samples will be disposed of 30 days after analysis

T17-2109

ASBESTOS SAMPLING FORM

CEI LABS

COMPANY CONTACT INFORMATION	
Company: Apex Environmental Management, Inc.	Job Contact: Tom Oliver
Project Name: COS 665 Saxon Ave ACM/LBP	
Project ID #: 0417-66	Tel: 864-640-5127

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
1	Popcorn ceiling texture		PLM ☑	TEM ☐
2	|		PLM ☑	TEM ☐
3	|		PLM ☑	TEM ☐
4	Drywall w/ JC +		PLM ☑	TEM ☐
5	tape |		PLM ☑	TEM ☐
6	|		PLM ☑	TEM ☐
7	|		PLM ☑	TEM ☐
8	|		PLM ☑	TEM ☐
9	Shower stall caulk		PLM ☑	TEM ☐
10	|		PLM ☑	TEM ☐
11	|		PLM ☐	TEM ☑
12	Grey square pattern		PLM ☑	TEM ☐
13	vinyl floor w/ mastic |		PLM ☐	TEM ☐
14	|		PLM ☐	TEM ☑
15	Yellow Octagon Pattern |		PLM ☑	TEM ☐
16	vinyl floor w/ mastic |		PLM ☑	TEM ☐
17	|		PLM ☐	TEM ☑
18	Brown square pattern |		PLM ☑	TEM ☐
19	vinyl floor w/ mastic |		PLM ☑	TEM ☐
20	|		PLM ☐	TEM ☑
21	12"x12" grey self- |		PLM ☑	TEM ☐
22	stick floor tile |		PLM ☑	TEM ☐
23	|		PLM ☐	TEM ☑
24	Yellow large square |		PLM ☑	TEM ☐
25	pattern vinyl floor w/ |		PLM ☑	TEM ☐
26	mastic		PLM ☐	TEM ☑
27	Thatch pattern vinyl |		PLM ☑	TEM ☐
28	floor w/ mastic |		PLM ☑	TEM ☐
29	|		PLM ☐	TEM ☑
30			PLM ☐	TEM ☐

T17-2109

ASBESTOS SAMPLING FORM

CEI LABS

COMPANY CONTACT INFORMATION	
Company: Apex Environmental Management, Inc.	Job Contact: Tom Oliver
Project Name: COS 665 Saxon Ave ACM/LBP	
Project ID #: 0417-66	Tel: 864-640-5127

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
30	Roof shingles (2) &		PLM ☑	TEM ☐
31	felt (1)		PLM ☑	TEM ☐
32			PLM ☐	TEM ☑
33	Window glazing		PLM ☑	TEM ☐
34			PLM ☑	TEM ☐
35			PLM ☐	TEM ☑
36	Metal roof sealant		PLM ☑	TEM ☐
37			PLM ☑	TEM ☐
38			PLM ☐	TEM ☑
39	Asphalt shingle siding		PLM ☑	TEM ☐
40	under vinyl - house		PLM ☑	TEM ☐
41			PLM ☐	TEM ☑
42	Asphalt shingle siding -		PLM ☑	TEM ☐
43	shed		PLM ☐	TEM ☐
44			PLM ☐	TEM ☑
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
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			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐
			PLM ☐	TEM ☐

SECTION IV

Photographic Log

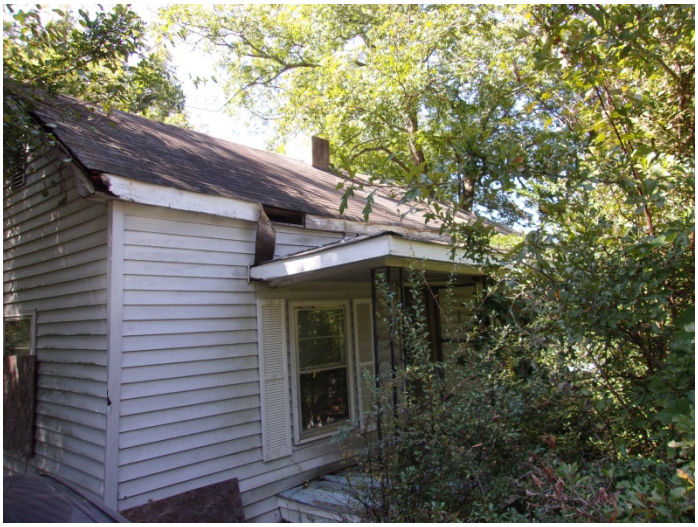
Photo 1 – 665 Saxon Avenue in Spartanburg, South Carolina.

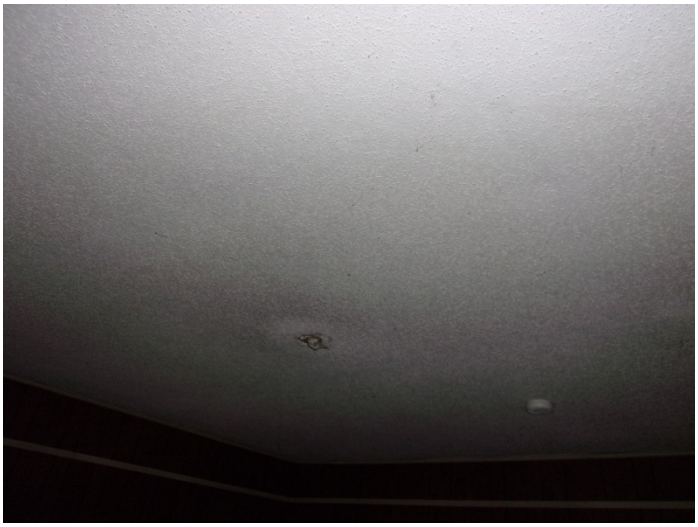
Photo 2 – Popcorn ceiling texture throughout.

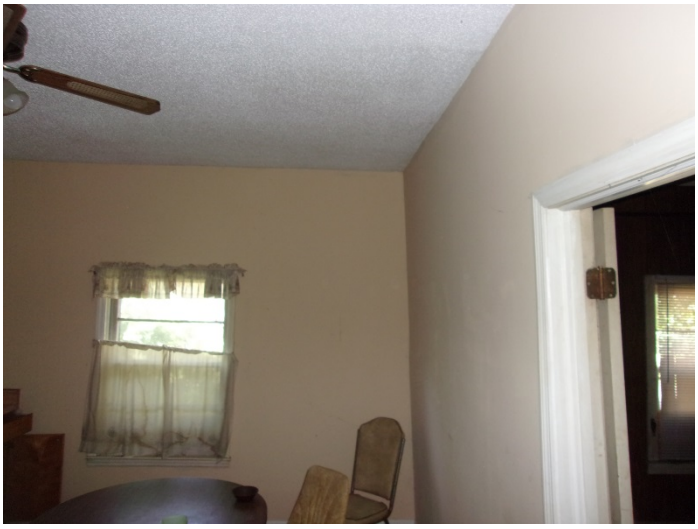
Photo 3 – Drywall with joint compound & tape throughout.

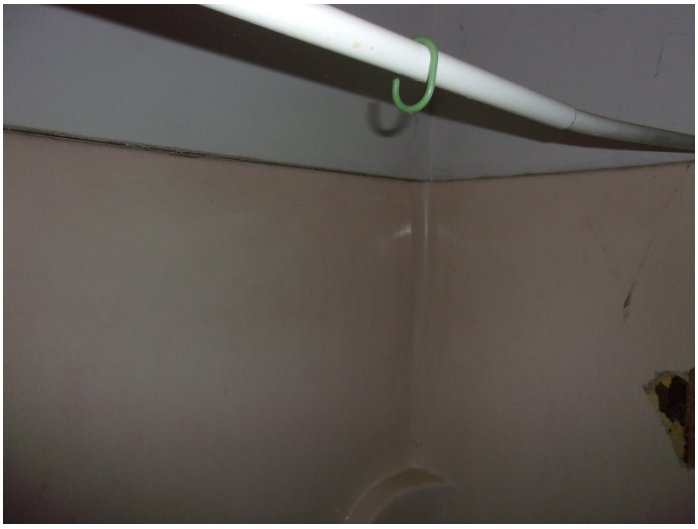
Photo 4 – Shower stall caulk in the bathroom.

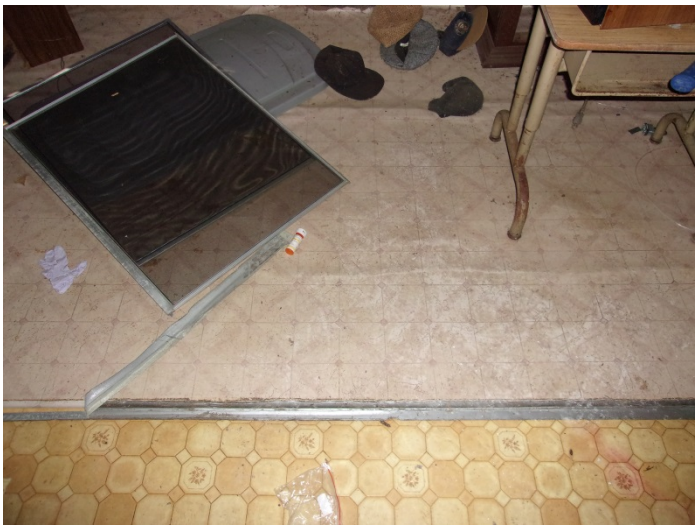
Photo 5 – Grey square pattern vinyl flooring with no mastic in the living room (patch).

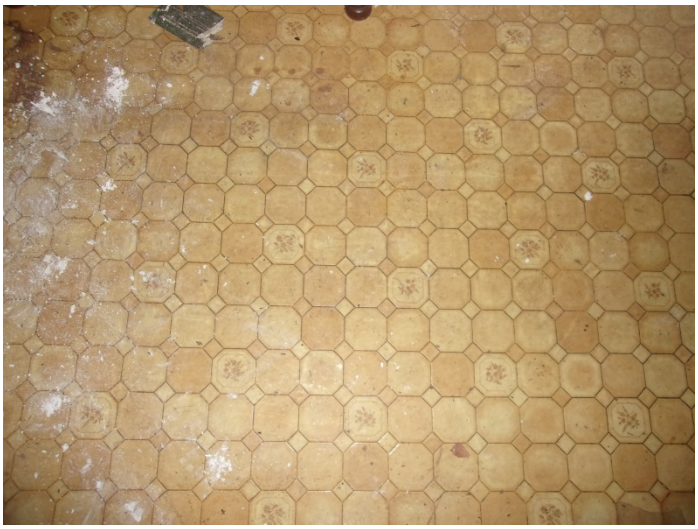
Photo 6 – Yellow octagon pattern vinyl flooring with mastic in the living room (patch).

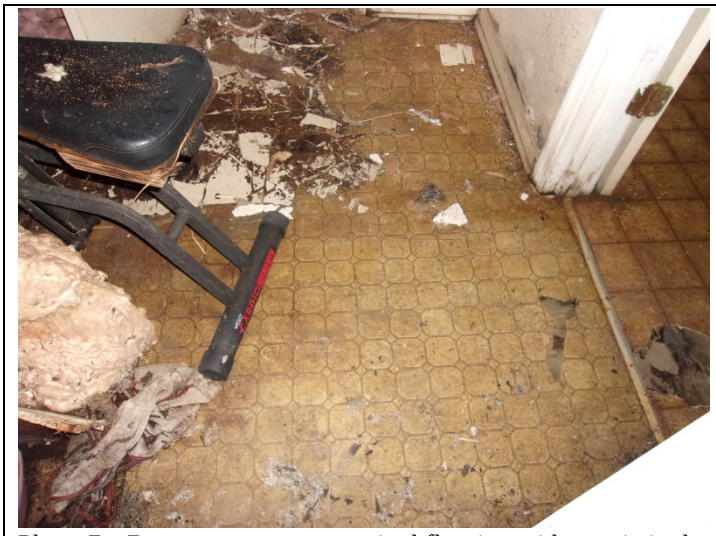

Photo 7 – Brown square pattern vinyl flooring with mastic in the hallway.

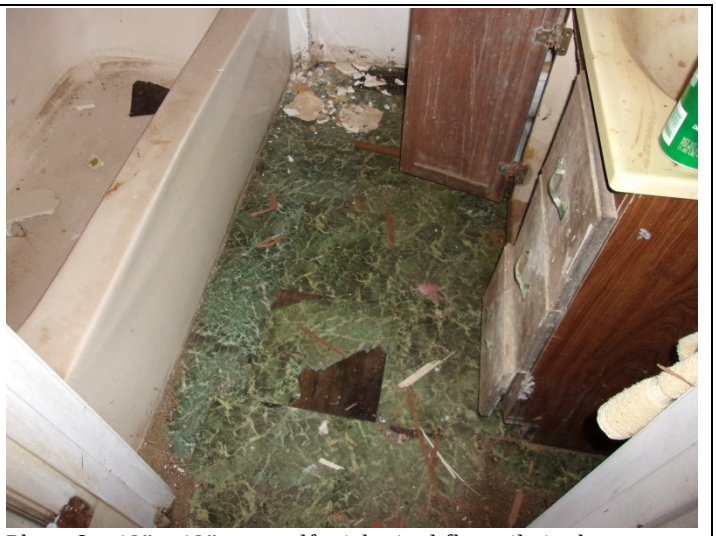

Photo 8 – 12" x 12" grey self-stick vinyl floor tile in the bathroom.

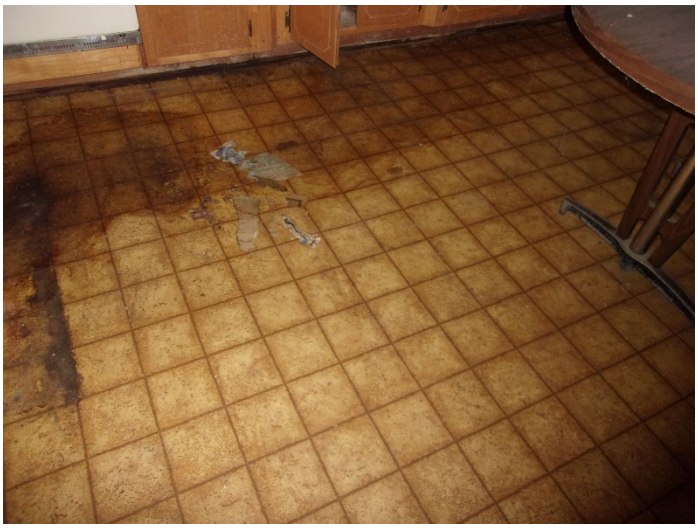

Photo 9 – Yellow large square pattern vinyl flooring with mastic in the kitchen.

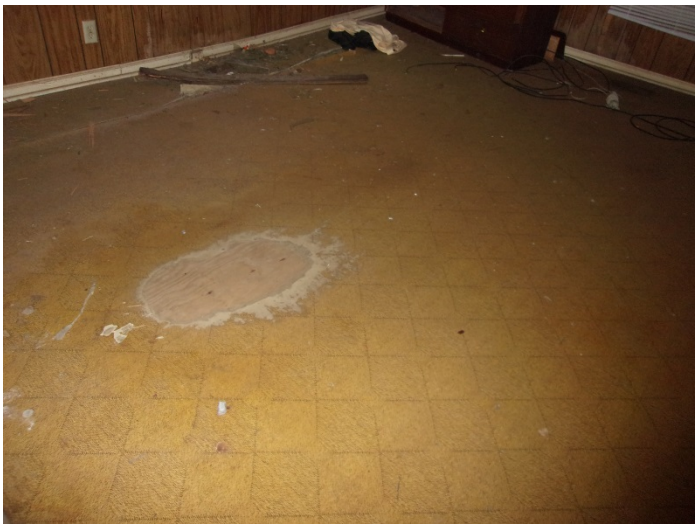

Photo 10 – Thatch pattern vinyl flooring with mastic in the bedroom.

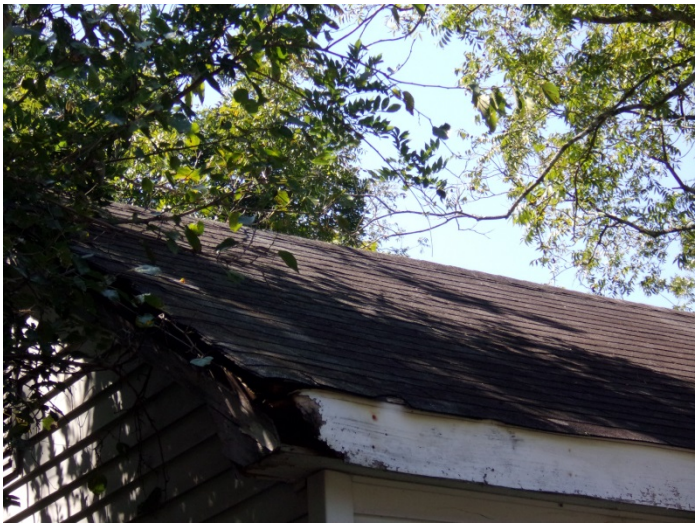

Photo 11 – Roof shingles & felt on the house roof.

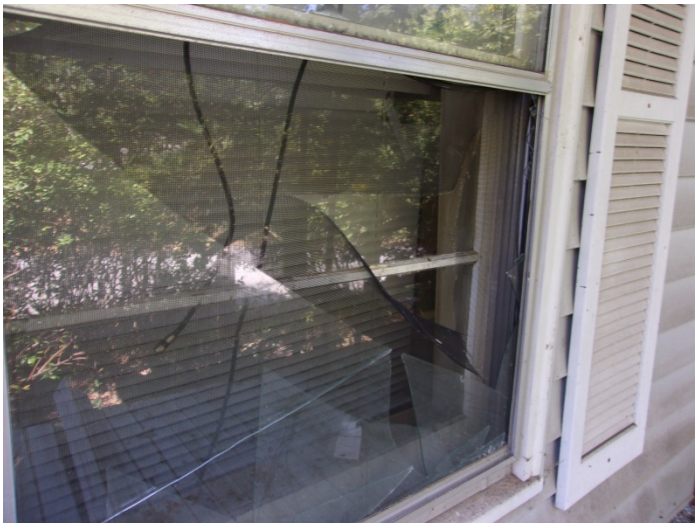

Photo 12 – wooden window glazing.


Photo 13 – Exterior shed.

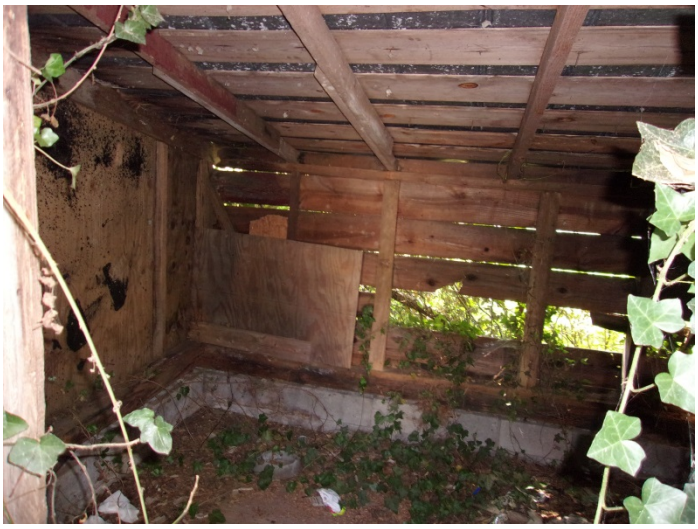
Photo 14 – Inside the exterior shed.


Photo 13 – Metal roof sealant on exteerior shed.

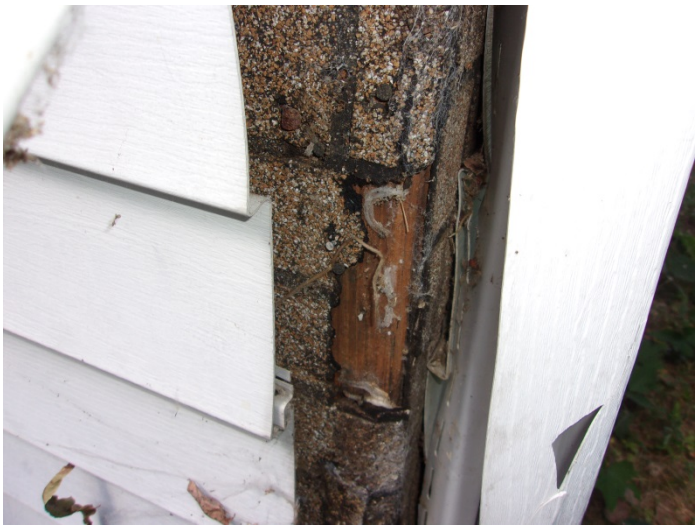
Photo 14 – Asphalt shingle siding under vinyl siding on the house.

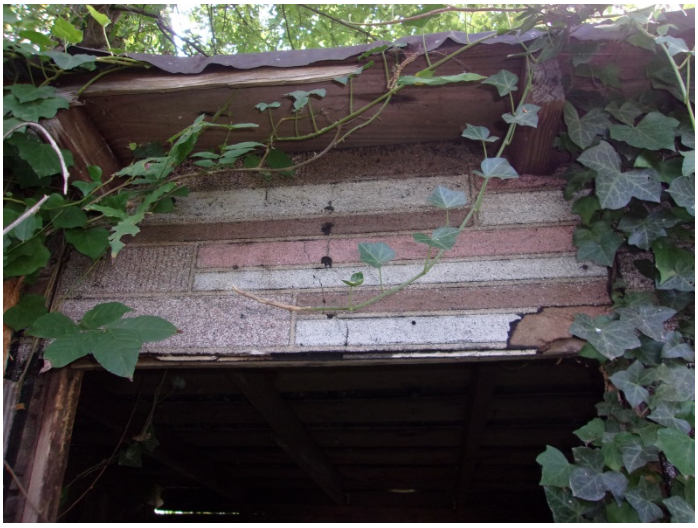
Photo 13 – Asphalt shingle siding on the exterior shed.

SECTION V

SC DHEC Asbestos Inspector License

SCDHEC ISSUED
Asbestos ID Card

Tedman K Shultz

Expiration Date

AIRSAMPLER	**AS-00355**	**02/24/18**
CONSULTBI	**BI-00971**	**01/18/18**

Tedman K Shultz
201 Cannon Circle
Greenville, SC 29607

115007

North Carolina
Asbestos Accreditation

EXPIRATION			
02-28-2018			
DOB	**SEX**	**HT**	**WT**
03-16-1972	M	5'10"	275
CLASS		**#**	**EXP**
AIR MONITOR		80864	02-18
INSPECTOR		12900	01-18