

Asbestos & Lead Based Paint Assessment

City of Spartanburg 773 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: 0118-14

March 12, 2017





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Apex Project Number 0118-14

March 12, 2018

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

Reference: Asbestos and Lead-Based Paint Assessment Services 773 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 773 SAXON AVENUE SPARTANBURG, SOUTH CAROLINA

APEX PROJECT NO. 0118-14

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SECTION I

Asbestos & Lead Evaluation Report

ASBESTOS EVALUATION REPORT APEX PROJECT NUMBER: 0118-14

Date:	3/12/2018	Page Number:	1 of 4
Client: Client Address:	City of Spartanburg 440 South Church Street Suite B Spartanburg, SC 29306	Client Contact: Client Phone Number:	Mr. Jeff Tillerson (864) 596-2911
Project:	Asbestos Evaluation and Lead Based Paint Assessment		
Property Address:	773 Saxon Avenue Spartanburg, SC		
Assessor:	Tom Oliver	Date of Assessment:	1/31/2018
Company:	Apex Environmental Management 7 Winchester Court Mauldin, SC 29662	Phone Number:	(864) 404-3210
Purpose of Assessment:	Demolition	Age of Structure:	Approximately 100 years
Building Type:	Residential	Number of Stories:	1
Foundation:	Crawlspace	Approximate Square Footage	1,500 SF

EXTERIOR BUILDING MATERIALS

- Pitched wooden roof with shingles & felt.
- Cement board siding over felt paper with wooden siding beneath.
- Wooden windows with glazing and caulk.
- Wooden doors with no caulk.
- Black mastic on roof flashing.
- A portion of the back of the house is collapsed due to fire and structural damage.

INTERIOR BUILDING MATERIALS

- Drywall and joint compound wall and ceiling system with plaster & finish beneath.
- Wooden wall panels with no mastic with drywall and plaster beneath.
- Wall texture over wooden wall panels, drywall & plaster.
- Black mastic dots under drywall.
- Multiple types & layers of vinyl flooring with and without mastics.
- Fire damage and portions of the floors, walls and ceilings have collapsed.
- Debris throughout the residence is considered to be contaminated ACM.

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.

<u>METHODS</u>

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. Fifty-four (54) 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). Sixteen (16) 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

<u>RESULTS</u>

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 Data Table* is located in Appendix II of this report and identifies positive materials and designates approximate quantities.

The residence has fire and structural damage in the back portion and throughout the residence. ACM was identified to exist in the back portion of the residence where the floors, ceilings and walls are collapsed. Apex recommends that the building be demolished in place and materials be treated and disposed of as friable ACM.

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

- Approximately 3,800 SF of drywall system and contaminated debris within the structure.
- Approximately 215 SF of 12" x 12" brown thin pattern floor tile in the main hallway.
- Approximately 215 SF of yellow pattern vinyl floor with no mastic in the front right bedroom under carpet.
- Approximately 300 SF of 3 layers of vinyl flooring with & without mastics in the back damaged area.
- Approximately 11 wooden windows with glazing.
- Approximately 1,700 SF of exterior cement board siding.

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

Currently, SCDHEC defines LBP as paint containing in excess of, or equal to, 1.0 mg/cm². The laboratory analytical results and chain-of-custody are included in the Lead Analysis Reports 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.

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

- Exterior white wooden porch ceiling, porch columns & porch headers.
- Exterior white wooden window frames.
- Exterior white wooden soffit/fascia.

RECOMMENDATIONS AND DISCUSSION

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. Demolish the residence with ACM in place and dispose of the waste stream as friable Regulated Asbestos Containing Materials (RACM) and delivered to an asbestos approved hazardous waste landfill for disposal.

City of Spartanburg 773 Saxon Avenue Apex Project No. 0118-14 March 12, 2018

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.

Please note that this document is not a specification for asbestos removal. It does not contain means and methods for asbestos abatement. If you are planning an asbestos 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. Quantities provided in this report are estimated. Contractors must verify material amounts prior to bidding or removal.

This report summarizes our evaluation of the conditions observed at the site. The findings prepared by Apex are based upon testing performed in the building space. Additional ACM may exist (undetected) in other areas due to their inaccessibility or due to the limited nature of our testing. Our assessment procedures and recommendations are based on the guidelines presented in EPA, State of South Carolina or OSHA asbestos regulations.

Lead-Based Paint

Currently the South Carolina Department of Health and Environmental Control (SCDHEC) define LBP as paint containing greater than 1.0 milligram per square centimeter (mg/cm²) 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 (μ g/m³) is established, personal air monitoring may be terminated. The full OSHA lead standard should be referenced for compliance.

A copy of this report must be submitted to SCDHEC at least ten (10) working days prior to demolition when applying for a demolition permit.

SECTION II

Asbestos & LBP Data Tables

ASBESTOS SURVEY FIELD DATA SHEET PLM & TEM ANALYSIS

Project Name: COS 773 Saxon Avenue ACM/LBP

Project Location: 773 Saxon Avenue, Spartanburg, SC

Project Number: 0118-14

Project Manager: Tom Oliver

Date: 1/31/2018

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
1			PLM - NAD			
2	Roof	Roof shingles (2 layers) and felt (1 layer)	FEW - NAD	Non-Friable	Good	2,000 SF
3		(1.14)017	TEM - NAD			
4						
5	Exterior windows	Window glazing	PLM - 2% chrysotile	Non-Friable	Good	11 EA
6						
7			PLM - NAD			
8	Exterior windows	Window caulk		Non-Friable	Good	2 EA
9			TEM - NAD			
10					Good	
11	Exterior siding	Cement board siding	PLM - 15% chrysotile	Non-Friable		1,700 SF
12						
13		Falt paper beneath compart board	PLM - NAD		Good	1,700 SF
14	Exterior siding	Felt paper beneath cement board siding		Non-Friable		
15			TEM - NAD			
16			PLM - NAD			
17	Roof flashing	Black mastic on roof flashing		Non-Friable	Good	30 LF
18			TEM - <1% chrysotile			
19						
20		Drywell with joint compound 9				
21	Throughout	Drywall with joint compound & tape	3% chrysotile	Friable	Damaged	3,800 SF
22]					
23						

Sampled By: Tom Oliver

ASBESTOS SURVEY FIELD DATA SHEET PLM & TEM ANALYSIS

Project Name: COS 773 Saxon Avenue ACM/LBP

Project Location: 773 Saxon Avenue, Spartanburg, SC

Project Number: 0118-14

Project Manager: Tom Oliver

Date:

1/31/2018

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
24						
25						
26	Throughout	Plaster with finish	PLM - NAD	Friable	Significantly Damaged	4,200 SF
27					Damagoa	
28						
29		Disal mantia data habind draval	PLM - NAD			475 SF
30	Main hallway	Black mastic dots behind drywall walls		Non-Friable	Good	
31		Wallo	TEM - NAD			
32			PLM - 5% chry (floor tile); NAD		Significantly	
33	Main hallway	12" x 12" brown thin pattern floor tile & adhesive	(mastic)	Friable	Significantly Damaged	215 SF
34			TEM - NAD (mastic)		34	
35			PLM - NAD			
36	Main hallway, front	left & right Wall texture		Friable	Good	1,800 SF
37	•					
38	bedrooms & kitchen					
39						
40	Front right					
41	bedroom under	Yellow pattern vinyl floor with no mastic	PLM - 25% chrysotile	Non-Friable	Good	215 SF
42	carpet					
43	Dining room in front	Poigo poiglou pattorn vinul floor	PLM - NAD		Good	
44	Dining room in front of kitchen	Beige paisley pattern vinyl floor with no mastic		Non-Friable		215 SF
45			TEM - NAD			

Sampled By: Tom Oliver

ASBESTOS SURVEY FIELD DATA SHEET PLM & TEM ANALYSIS

COS 773 Saxon Avenue ACM/LBP Project Name:

Project Location: 773 Saxon Avenue, Spartanburg, SC

Project Number: 0118-14

Project Manager: Tom Oliver

Sampled By:

Date: 1/31/2018

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
46			PLM - NAD		Cincificanthy	
47	Kitchen - top layer	Brown pattern vinyl floor with no mastic		Friable	Significantly Damaged	150 SF
48		maono	TEM - NAD			
49	Kitchen - under	Yellow pattern floor tile & mastic	PLM - NAD	Friable	Significantly Damaged	150 SF
50	wood (2nd & 3rd	over yellow pattern vinyl floor with no mastic				
51	layers)		TEM - NAD			
52	Deale damaged		PLM - bottom layer-5% chry			
53	Back damaged 3 layers of vinyl flooring w area without mastics		(flooring); 2% chry (mastic)	Friable	Significantly Damaged	300 SF
54	4164	Willout Mastics	TEM - <1% chry (top 2 layers)		Damaged	
NAD = No Asbest	tos Detected	LF = Linear Feet	EA = Each	Amos = Amosite		

Bold = Positive For Asbestos

SF = Square Feet

Chry = Chrysotile

Tom Oliver

FIELD DATA SHEET LBP ANALYSIS

M/LBP	Sampled By:	Tom Oliver
ourg, SC	Project Manager:	Tom Oliver
	Date:	1/31/2018

Project Name: COS 773 Saxon Avenue ACM/LB

Project Location: 773 Saxon Avenue Spartanburg, SC

Project Number: 0417-66

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result			
Sample NO.		Component	Color	Substrate	(mg/m ³)			
1	1 Standardization Calibration							
2		1.10						
3		Calibration			1.11			
4		Calibration			1.21			
5	Exterior	Porch ceiling	White	Wood	1.98			
6	Exterior	Porch column	White	Wood	2.58			
7	Exterior	Porch handrail	White	Wood	0.00			
8	Exterior	Porch floor	Brown	Wood	0.01			
9	Exterior	Door frame	White	Wood	0.00			
10	Exterior	Door	White	Wood	0.00			
11	Exterior	Window frame	White	Wood	1.00			
12	Exterior	Window	White	Wood	0.05			
13	Exterior	Porch header	White	Wood	2.64			
14	Exterior	Siding	White	Cement board	0.00			
15	Exterior	Foundation	Blue	Concrete	0.00			
16	Exterior	Porch floor trim	Blue	Wood	0.00			
17	Exterior	Siding	Yellow	Wood	0.25			
18	Exterior	Trim	White	Wood	2.24			
19	Exterior	Soffit/Fascia	White	Wood	2.42			
20	Interior	Wall	Gray	Drywall	0.00			
21	Interior	Ceiling	Gray	Drywall	0.00			
22	Interior	Door frame	Gray	Wood	0.78			
23	Interior	Door	Gray	Wood	0.00			
24	Interior	Wall	White	Wooden panel	0.00			

FIELD DATA SHEET LBP ANALYSIS

Project Name: COS 773 Saxon Avenue ACM/LBP

Project Location: 773 Saxon Avenue Spartanburg, SC

Project Number: 0417-66

 Sampled By:
 Tom Oliver

 Project Manager:
 Tom Oliver

 Date:
 1/31/2018

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result (mg/m ³)		
25	Interior	Wall	Blue	Drywall	0.00		
26	Interior	Window frame	White	Wood	0.26		
27	Interior	Window	White	Wood	0.09		
28	Interior	Fireplace	Brown	Wood	0.09		
29	Interior	Door frame	Brown	Wood	0.12		
30	Interior	Wall	Brown	Plaster	0.00		
31	Interior	Wall	Gray	Wooden panel	0.00		
32	Interior	Base board	White	Wooden panel	0.07		
33	Interior	Fireplace	Gray	Wooden panel	0.04		
34	Interior	Wall	Yellow	Plaster	0.15		
35	Interior	Wall	Gray	Plaster	0.16		
36	Interior	Ceiling	Gray	Plaster	0.00		
37	Interior	Base board	Gray	Wood	0.15		
38	Interior	Window frame	Gray	Wood	0.16		
39	Interior	Window	Gray	Wood	0.00		
40							
41	41 Calibration						
42		Calibration					

Bold = LBP

SECTION III

Laboratory Analytical Results



February 15, 2018

Apex Environmental Management 7 Winchester Court Mauldin, SC 29662

CLIENT PROJECT:	COS 773 Saxon Ave ACM/LBP; 0118-14
CEI LAB CODE:	A18-2203

CEI

Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on February 8, 2018. 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.

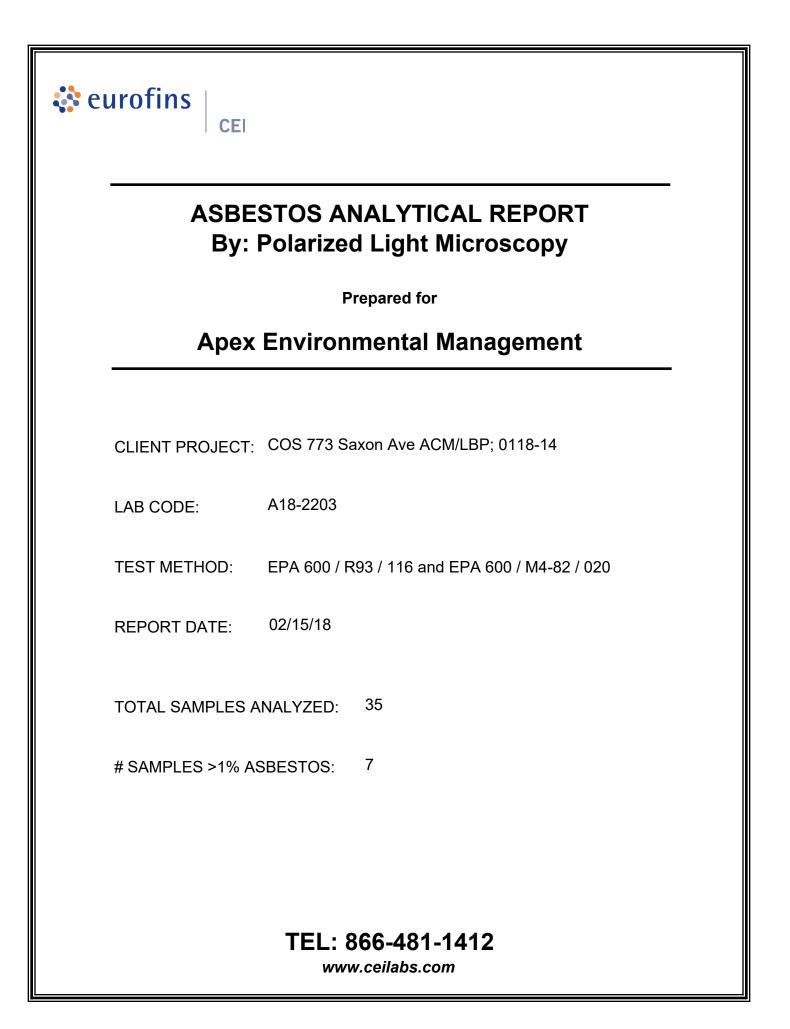
Thank you for your business and we look forward to continuing good relations. If you have any questions, please feel free to call our office at 919-481-1413.

Kind Regards,

Man Sao De

Tianbao Bai, Ph.D., CIH Laboratory Director







Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: COS 773 Saxon Ave ACM/LBP; 0118-14 LAB CODE: A18-2203

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

CEI

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
1		A2620864A	Black	Roof Shingle	None Detected
	Layer 1	A2620864B	Black	Roof Shingle	None Detected
	Layer 2	A2620864B	Black	 Felt	None Detected
2		A2620865A	Black	Roof Shingle	None Detected
	Layer 1	A2620865B	Black	Roof Shingle	None Detected
	Layer 2	A2620865B	Black	Felt	None Detected
3		A2620866		Sample Submitted for TEM Analysis	
4		A2620867	White	Window Glazing	Chrysotile 2%
5		A2620868		Sample Not Analyzed per COC	
6		A2620869		Sample Not Analyzed per COC	
7		A2620870	White	Window Caulk	None Detected
8		A2620871	White	Window Caulk	None Detected
9		A2620872		Sample Submitted for TEM Analysis	
10		A2620873	White,Gray	Cement Board Siding	Chrysotile 15%
11		A2620874		Sample Not Analyzed per COC	
12		A2620875		Sample Not Analyzed per COC	
13		A2620876	Black	Felt Paper	None Detected
14		A2620877	Black	Felt Paper	None Detected
15		A2620878		Sample Submitted for TEM Analysis	
16		A2620879	Black	Mastic	None Detected
17		A2620880	Black	Mastic	None Detected
18		A2620881		Sample Submitted for TEM Analysis	
19	Layer 1	A2620882	White	Joint Compound	None Detected
	Layer 2	A2620882	White	Таре	None Detected
	Layer 3	A2620882	White	Drywall	None Detected
20	Layer 1	A2620883	Beige	Joint Compound	Chrysotile 3%
	Layer 2	A2620883	White	Таре	None Detected
	Layer 3	A2620883	White	Drywall	None Detected



Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: COS 773 Saxon Ave ACM/LBP; 0118-14 LAB CODE: A18-2203

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

CEI

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
21		A2620884		Sample Not Analyzed per COC	
22		A2620885		Sample Not Analyzed per COC	
23		A2620886		Sample Not Analyzed per COC	
24	Layer 1	A2620887	White	Finish	None Detected
	Layer 2	A2620887	Gray	Plaster	None Detected
25	Layer 1	A2620888	White	Finish	None Detected
	Layer 2	A2620888	Tan	Plaster	None Detected
26	Layer 1	A2620889	White	Finish	None Detected
	Layer 2	A2620889	Gray	Plaster	None Detected
27	Layer 1	A2620890	White	Finish	None Detected
	Layer 2	A2620890	Tan	Plaster	None Detected
28	Layer 1	A2620891	White	Finish	None Detected
	Layer 2	A2620891	Tan	Plaster	None Detected
29		A2620892	Black	Mastic Dots	None Detected
30		A2620893	Black	Mastic Dots	None Detected
31		A2620894		Sample Submitted for TEM Analysis	
32		A2620895A	Brown, Patterned	Floor Tile	Chrysotile 5%
		A2620895B	Clear	Adhesive	None Detected
33		A2620896A		Sample Not Analyzed per COC	
		A2620896B	Clear	Adhesive	None Detected
34		A2620897A		Sample Not Analyzed per COC	
		A2620897B		Sample Submitted for TEM Analysis	
35		A2620898	White	Wall Texture	None Detected
36		A2620899	White	Wall Texture	None Detected
37		A2620900	White	Wall Texture	None Detected
38		A2620901	White	Wall Texture	None Detected
39		A2620902	Brown	Wall Texture	None Detected
40		A2620903	Yellow, Patterned	Vinyl Flooring	Chrysotile 25%



Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: COS 773 Saxon Ave ACM/LBP; 0118-14 LAB CODE: A18-2203

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

CEI

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
41		A2620904		Sample Not Analyzed per COC	
42		A2620905		Sample Not Analyzed per COC	
43		A2620906	Beige,Paisley	Vinyl Flooring	None Detected
44		A2620907	Beige,Paisley	Vinyl Flooring	None Detected
45		A2620908		Sample Submitted for TEM Analysis	
46		A2620909	Brown, Patterned	Vinyl Flooring	None Detected
47		A2620910	Brown, Patterned	Vinyl Flooring	None Detected
48		A2620911		Sample Submitted for TEM Analysis	
49		A2620912A	Yellow, Patterned	Floor Tile	None Detected
		A2620912B	Clear	Mastic	None Detected
		A2620912C	Orange, Patterned	Vinyl Flooring	None Detected
50		A2620913A	Yellow, Patterned	Floor Tile	None Detected
		A2620913B	Clear	Mastic	None Detected
		A2620913C	Orange, Patterned	Vinyl Flooring	None Detected
51		A2620914		Sample Submitted for TEM Analysis	
52		A2620915A	White,Blue	Vinyl Flooring	None Detected
		A2620915B	Beige	Floor Tile	None Detected
		A2620915C	Clear	Mastic	None Detected
	Layer 1	A2620915D	Brown, Patterned	Vinyl Flooring	Chrysotile 25%
	Layer 2	A2620915D	Beige	Mastic	Chrysotile 2%
53		A2620916A	White,Blue	Vinyl Flooring	None Detected
		A2620916B	Beige	Floor Tile	None Detected
		A2620916C	Clear	Mastic	None Detected
		A2620916D		Sample Not Analyzed per COC	



By: POLARIZING LIGHT MICROSCOPY

PROJECT: COS 773 Saxon Ave ACM/LBP; 0118-14 LAB CODE: A18-2203

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

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
54		A2620917A		Sample Submitted for TEM Analysis	
		A2620917B		Sample Submitted for TEM Analysis	
		A2620917C		Sample Submitted for TEM Analysis	
		A2620917D		Sample Not Analyzed per COC	>



By: POLARIZING LIGHT MICROSCOPY

CEI

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

 Lab Code:
 A18-2203

 Date Received:
 02-08-18

 Date Analyzed:
 02-14-18

 Date Reported:
 02-15-18

Project: COS 773 Saxon Ave ACM/LBP; 0118-14

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes		NON-ASBESTOS COMPONENT Fibrous Non-Fibrou			ASBESTOS %
1 A2620864A	Roof Shingle	Heterogeneous Black Fibrous Bound	20%	Fiberglass	55% 25%	Tar Gravel	None Detected
Layer 1 A2620864B	Roof Shingle	Heterogeneous Black Fibrous Bound	20%	Fiberglass	55% 25%	Tar Gravel	None Detected
Layer 2 A2620864B	Felt	Homogeneous Black Fibrous Bound	70%	Cellulose	30%	Tar	None Detected
2 A2620865A	Roof Shingle	Heterogeneous Black Fibrous Bound	20%	Fiberglass	55% 25%	Tar Gravel	None Detected
Layer 1 A2620865B	Roof Shingle	Heterogeneous Black Fibrous Bound	20%	Fiberglass	55% 25%	Tar Gravel	None Detected
Layer 2 A2620865B	Felt	Homogeneous Black Fibrous Bound	70%	Cellulose	30%	Tar	None Detected
3 A2620866	Sample Submitted for TEM Analysis						
4 A2620867	Window Glazing	Heterogeneous White Non-fibrous Bound			5% 50% 43%	Paint Calc Carb Binder	2% Chrysotile



By: POLARIZING LIGHT MICROSCOPY

CEI

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

 Lab Code:
 A18-2203

 Date Received:
 02-08-18

 Date Analyzed:
 02-14-18

 Date Reported:
 02-15-18

Client ID	Lab	Lab	NO	N-ASBESTOS	сомро	NENTS	ASBESTOS
Lab ID	Description	Attributes	Fibr	ous	Non-F	Fibrous	%
5 A2620868	Sample Not Analyzed per COC						
6 A2620869	Sample Not Analyzed per COC						
7 A2620870	Window Caulk	Heterogeneous White Non-fibrous Bound			95% 5% <1%	Caulk Binder Paint	None Detected
8 A2620871	Window Caulk	Heterogeneous White Non-fibrous Bound			95% 5% <1%	Caulk Binder Paint	None Detected
9 A2620872	Sample Submitted for TEM Analysis						
10 A2620873	Cement Board Siding	Heterogeneous White,Gray Fibrous Bound			5% 30% 50%	Paint Silicates Binder	15% Chrysotile
11 A2620874	Sample Not Analyzed per COC						
12 A2620875	Sample Not Analyzed per COC						
13 A2620876	Felt Paper	Heterogeneous Black Fibrous Bound	70%	Cellulose	30%	Tar	None Detected
14 A2620877	Felt Paper	Heterogeneous Black Fibrous Bound	70%	Cellulose	30%	Tar	None Detected



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 Lab Code:
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 Date Reported:
 02-15-18

Project: COS 773 Saxon Ave ACM/LBP; 0118-14

ASBESTOS BULK PLM, EPA 600 METHOD **NON-ASBESTOS COMPONENTS Client ID** Lab Lab **ASBESTOS** Lab ID Description Attributes **Fibrous** Non-Fibrous % Sample Submitted for 15 **TEM Analysis** A2620878 16 Mastic Heterogeneous 15% Cellulose 80% Tar None Detected A2620879 Black 5% Paint Fibrous Bound 17 Mastic Heterogeneous 15% Cellulose 80% Tar None Detected A2620880 5% Paint Black Fibrous Bound 18 Sample Submitted for **TEM Analysis** A2620881 19 Joint Compound Heterogeneous 5% None Detected Paint White 70% Calc Carb Layer 1 A2620882 Non-fibrous 25% Binder Bound Layer 2 Tape Homogeneous 100% Cellulose None Detected A2620882 White Fibrous Bound Layer 3 Drywall Homogeneous 10% Cellulose 90% Gypsum None Detected A2620882 White Fibrous Bound 5% 3% Chrysotile 20 Joint Compound Heterogeneous Paint Layer 1 Beige 65% Calc Carb A2620883 Non-fibrous 27% Binder Bound



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 02-14-18

 Date Reported:
 02-15-18

Project: COS 773 Saxon Ave ACM/LBP; 0118-14

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID	Lab	Lab		N-ASBESTOS		ASBESTOS	
Lab ID	Description	Attributes	Fibr	ous	Non-F	-ibrous	<u>%</u>
Layer 2 A2620883	Таре	Homogeneous White Fibrous Bound	100%	Cellulose			None Detected
Layer 3 A2620883	Drywall	Homogeneous White Fibrous Bound	10%	Cellulose	90%	Gypsum	None Detected
21 A2620884	Sample Not Analyzed per COC						
22 A2620885	Sample Not Analyzed per COC						
23 A2620886	Sample Not Analyzed per COC						
24 Layer 1 A2620887	Finish	Heterogeneous White Non-fibrous Bound			<1% 35% 65%	Paint Silicates Binder	None Detected
Layer 2 A2620887	Plaster	Heterogeneous Gray Non-fibrous Bound	<1%	Cellulose	65% 35%	Silicates Binder	None Detected
25 Layer 1 A2620888	Finish	Heterogeneous White Non-fibrous Bound			5% 65% 30%	Paint Calc Carb Binder	None Detected
Layer 2 A2620888	Plaster	Heterogeneous Tan Non-fibrous Bound	<1%	Cellulose	65% 35%	Silicates Binder	None Detected



By: POLARIZING LIGHT MICROSCOPY

CEI

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

 Lab Code:
 A18-2203

 Date Received:
 02-08-18

 Date Analyzed:
 02-14-18

 Date Reported:
 02-15-18

Project: COS 773 Saxon Ave ACM/LBP; 0118-14

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NO Fibr	N-ASBESTOS ous		NENTS ïbrous	ASBESTOS %
26 Layer 1 A2620889	Finish	Heterogeneous White Non-fibrous Bound			5% 35% 60%	Paint Silicates Binder	None Detected
Layer 2 A2620889	Plaster	Heterogeneous Gray Non-fibrous Bound	<1%	Cellulose	65% 35%	Silicates Binder	None Detected
27 Layer 1 A2620890	Finish	Heterogeneous White Non-fibrous Bound			5% 35% 60%	Paint Calc Carb Binder	None Detected
Layer 2 A2620890	Plaster	Heterogeneous Tan Non-fibrous Bound	<1%	Cellulose	65% 35%	Silicates Binder	None Detected
28 Layer 1 A2620891	Finish	Heterogeneous White Non-fibrous Bound			5% 35% 60%	Paint Calc Carb Binder	None Detected
Layer 2 A2620891	Plaster	Heterogeneous Tan Non-fibrous Bound	<1%	Cellulose	65% 35%	Silicates Binder	None Detected
29 A2620892	Mastic Dots	Homogeneous Black Non-fibrous Bound			100%	Mastic	None Detected



By: POLARIZING LIGHT MICROSCOPY

CEI

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

 Lab Code:
 A18-2203

 Date Received:
 02-08-18

 Date Analyzed:
 02-14-18

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 02-15-18

Client ID	Lab	Lab	NO	N-ASBESTOS	COMPO	NENTS	ASBESTOS
Lab ID	Description	Attributes	Fibr	ous	Non-F	ibrous	%
30 A2620893	Mastic Dots	Homogeneous Black Non-fibrous Bound			100%	Mastic	None Detected
31 A2620894	Sample Submitted for TEM Analysis						
32 A2620895A	Floor Tile	Heterogeneous Brown,Patterned Non-fibrous Bound			95%	Vinyl	5% Chrysotile
A2620895B	Adhesive	Homogeneous Clear Non-fibrous Bound	<1%	Cellulose	100%	Mastic	None Detected
33 A2620896A	Sample Not Analyzed per COC						
A2620896B	Adhesive	Homogeneous Clear Non-fibrous Bound	<1%	Cellulose	100%	Mastic	None Detected
34 A2620897A	Sample Not Analyzed per COC						
A2620897B	Sample Submitted for TEM Analysis						
35 A2620898	Wall Texture	Heterogeneous White Non-fibrous Bound			5% 70% 25%	Paint Calc Carb Binder	None Detected



By: POLARIZING LIGHT MICROSCOPY

CEI

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

 Lab Code:
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 Date Received:
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 Date Analyzed:
 02-14-18

 Date Reported:
 02-15-18

Client ID Lab ID	Lab Description	Lab Attributes	NOI Fibr	N-ASBESTOS ous		NENTS Fibrous	ASBESTOS %
36 A2620899	Wall Texture	Heterogeneous White Non-fibrous Bound			5% 70% 25%	Paint Calc Carb Binder	None Detected
37 A2620900	Wall Texture	Heterogeneous White Non-fibrous Bound			5% 70% 25%	Paint Calc Carb Binder	None Detected
38 A2620901	Wall Texture	Heterogeneous White Non-fibrous Bound			5% 70% 25%	Paint Calc Carb Binder	None Detected
39 A2620902	Wall Texture	Heterogeneous Brown Non-fibrous Bound			5% 70% 25%	Paint Calc Carb Binder	None Detected
40 A2620903	Vinyl Flooring	Heterogeneous Yellow,Patterned Fibrous Bound			50% 25%	Vinyl Binder	25% Chrysotile
41 A2620904	Sample Not Analyzed per COC						
42 A2620905	Sample Not Analyzed per COC						
43 A2620906	Vinyl Flooring	Heterogeneous Beige,Paisley Fibrous Bound	30% 10%	Cellulose Fiberglass	50% 10%	Vinyl Binder	None Detected



By: POLARIZING LIGHT MICROSCOPY

CEI

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

 Lab Code:
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 Date Received:
 02-08-18

 Date Analyzed:
 02-14-18

 Date Reported:
 02-15-18

Client ID	Lab	Lab		N-ASBESTOS			ASBESTOS
Lab ID	Description	Attributes	Fibr	ous	Non-F	ibrous	%
44 A2620907	Vinyl Flooring	Heterogeneous Beige,Paisley Fibrous Bound	30% 10%	Cellulose Fiberglass	50% 10%	Vinyl Binder	None Detected
45 A2620908	Sample Submitted for TEM Analysis						
46 A2620909	Vinyl Flooring	Heterogeneous Brown,Patterned Fibrous Bound	40% 10%	Cellulose Fiberglass	50%	Vinyl	None Detected
47 A2620910	Vinyl Flooring	Heterogeneous Brown,Patterned Fibrous Bound	40% 10%	Cellulose Fiberglass	50%	Vinyl	None Detected
48 A2620911	Sample Submitted for TEM Analysis						
49 A2620912A	Floor Tile	Heterogeneous Yellow,Patterned Non-fibrous Bound			100%	Vinyl	None Detected
A2620912B	Mastic	Homogeneous Clear Non-fibrous Bound			100%	Mastic	None Detected
A2620912C	Vinyl Flooring	Heterogeneous Orange, Patterned Fibrous Bound	30% 10%	Cellulose Fiberglass	50% 10%	Vinyl Binder	None Detected



By: POLARIZING LIGHT MICROSCOPY

CEI

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

 Lab Code:
 A18-2203

 Date Received:
 02-08-18

 Date Analyzed:
 02-14-18

 Date Reported:
 02-15-18

Project: COS 773 Saxon Ave ACM/LBP; 0118-14

ASBESTOS BULK PLM, EPA 600 METHOD **NON-ASBESTOS COMPONENTS Client ID** ASBESTOS Lab Lab Lab ID Description Attributes **Fibrous** Non-Fibrous % Floor Tile Heterogeneous 100% Vinyl None Detected 50 Yellow, Patterned A2620913A Non-fibrous Bound Homogeneous 100% Mastic None Detected A2620913B Mastic Clear Non-fibrous Bound A2620913C Vinyl Flooring Heterogeneous 30% Cellulose 50% Vinyl None Detected Orange, 10% Fiberglass 10% Binder Patterned Fibrous Bound Sample Submitted for 51 TEM Analysis A2620914 Vinyl Flooring Heterogeneous 25% Cellulose 50% Vinyl None Detected 52 A2620915A White,Blue 10% Fiberglass 15% Binder Fibrous Bound A2620915B Floor Tile Heterogeneous 100% Vinyl None Detected Beige Non-fibrous Bound A2620915C Mastic Homogeneous 100% Mastic None Detected Clear Non-fibrous Bound Layer 1 Vinyl Flooring Heterogeneous 50% Vinyl 25% Chrysotile A2620915D Brown,Patterned Binder 25% Fibrous Bound



By: POLARIZING LIGHT MICROSCOPY

CEI

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

per COC

 Lab Code:
 A18-2203

 Date Received:
 02-08-18

 Date Analyzed:
 02-14-18

 Date Reported:
 02-15-18

Project: COS 773 Saxon Ave ACM/LBP; 0118-14

ASBESTOS BULK PLM, EPA 600 METHOD **NON-ASBESTOS COMPONENTS Client ID** Lab Lab ASBESTOS Lab ID Description Attributes **Fibrous Non-Fibrous** % Layer 2 Mastic Heterogeneous 98% Mastic 2% Chrysotile A2620915D Beige Non-fibrous Bound Lab Notes: Analyst opinion: Possible contamination from associated Vinyl Flooring Vinyl Flooring Heterogeneous 25% Cellulose 50% Vinyl None Detected 53 A2620916A White,Blue 10% Fiberglass 15% Binder Fibrous Bound Floor Tile Vinyl A2620916B Heterogeneous 100% None Detected Beige Non-fibrous Bound A2620916C 100% Mastic None Detected Mastic Homogeneous Clear Non-fibrous Bound A2620916D Sample Not Analyzed per COC Sample Submitted for 54 **TEM Analysis** A2620917A A2620917B Sample Submitted for **TEM Analysis** A2620917C Sample Submitted for **TEM Analysis** A2620917D Sample Not Analyzed



CEI

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 Eurofins CEI. Eurofins CEI 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:

aved

Samantha Carc

APPROVED BY:

Tianbao Bai, Ph.D., CIH Laboratory Director



CELSS 730 SE Maynard Road, Capy NC

ASBESTOS ASECTODY A2620917

730 SE Maynard Road, Cary, NC 27511 Tel: 866-481-1412; Fax: 919-481-1442

Tel: 866-481-1412; Fax: 919-481-1442	CEI Lab I.D. Range:	
COMPANY INFORMATION	PROJECT INFORMATION	
CEI CLIENT #:	Job Contact: Tom Oliver	
Company: Apex Environmental Management, Inc.	Email / Tel: 864-640-5127	
Address: 7 Winchester Ct.	Project Name: COS 773 Saxon Ave AL	M/CBP
	Project ID#: 0118-14	
Email: toliverpaper-chs.com	PO #:	
	STATE SAMPLES COLLECTED IN: SC	

LAB USE ONLY:

CEI Lab Code:

IF TAT IS NOT MARKED STANDARD 3 DAY TAT APPLIES.

				TURN AR	OUND TIME		
ASBESTOS	METHOD	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		18				
PLM BULK	CARB 435						
PCM AIR	NIOSH 7400						
TEM AIR	EPA AHERA						
TEM AIR	NIOSH 7402						
TEM AIR	ISO 10312						
TEM AIR	ASTM 6281-09						
TEM BULK	CHATFIELD	A Starting					A
TEM DUST WIPE	ASTM D6480-05						
TEM DUST MICROVAC	ASTM D5755-09						
TEM SOIL	ASTM D7521-13	all said					
TEM VERMICULITE	CINCINNATI METHOD		ALL THE				
OTHER:							

REMARKS/SPECIAL IN Positive stop a			Accept Samples
Relinquished By:	Date/Time	Received By:	Date/Time
1 Alexandress of the second se	2-7-18		
		AR	2.8.18 9:36
Samples will be disposed of	30 days after analysis		Page of6 2

A18-2203

ASBESTOS SAMPLING FORM



COMPANY CONTACT INFORMATION	
Company: Apex Environmental Man	acten ut Job Contact: Tom Oliver
Project Name: COS 773 Soxon Ave A	2CM/LB10
Project ID #: 0118 - 14	Tel: 864-640-5127

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST	
1			PLM	TEM
2	Root Shingles (2) + felt (1)		PLM	TEM
3			PLM	TEM
4	Window glazing		PLM	TEM
5			PLM	TEM
6			PLM	TEM
7	Window Caull		PLM	TEM
B			PLM	ТЕМ
9			PLM	TEM
10	Cement board siding	1.	PLM	TEM
1(PLM	TEM
(2			PLM	TEM
13	Felt paper beneath coment		PLM	TEM
14	board siding 1		PLM	TEM
(5			PLM	TEM
16	Black Mastin on root		PLM	ТЕМ
17	Hashing 1		PLM	TEM
18			PLM	TEM
19	prywall with joint		PLM	TEM
20	compound + take 1		PLM	ТЕМ
21			PLM	TEM
22			PLM	TEM
23			PLM	TEM
24	Plaster with finish		PLM	TEM
25			PLM	TEM
26			PLM	TEM
27 28			PLM	TEM
28			PLM	TEM

Page 2 of 3

ASBESTOS SAMPLING FORM



COMPANY CON	TACT INFORMATION				
Company: Apex Environ untal Management Job Contact: Tom Oliver Project Name: COS 723 Saxon Are Acm/LBP					
Project Name: CC	05773 Saxon Ave Acm/LBA	2			
Project ID #: 0118-14		Tel: 864-640-5127			
			and be a stress of the output of		
SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA	TEST		
29	Blauk mastic dots		PLM	TEM	
30	beneath drynch and the	2	PLM	TEM	
31			PLM	TEM	
32	12"x 12" brown thin		PLM	TEM	
33	pattern Floor tile +		PLM	TEM	
34	adhesive 1		PLM	TEM	

SAMPLE ID#	DESCRIPTION / LOCATION	AREA	TEST	
29	Blaul mastic dots		PLM	TEM
30	beneath drynch and	Q	PLM	TEM
31			PLM	TEM
32	12"x 12" brown thin		PLM	TEM
33	pattern Floor tile +		PLM	TEM
34	adhesive	_	PLM	TEM
35	Wall texture		PLM	TEM
36			PLM	TEM
37			PLM	TEM
38			PLM	TEM
39			PLM	TEM
40	Yellow pattern vinyl		PLM	TEM
41	floor with no mostic	_	PLM	TEM
42			PLM	TEM
43	Beige paisley pattern		PLM	TEM
44	vinyl Floor workith		PLM	TEM
45	no mastin	- F	PLM	TEM
46	Brown pattern viry		PLM	TEM
47	Floor with no mastic		PLM	ТЕМ
48		-	PLM	TEM
49	Yellow pattern floor tite		PLM	ТЕМ
50	+ mastic over \$ 2 rd layer	-	PLM	TEM
51	Lot viny floor in no master	4	PLM	TEM
SL	Multiple layers of		PLM	TEM
53	viny/ floor with thit		PLM	TEM
54	no mastics		PLM	TEM
			PLM	TEM
			PLM	TEM

Page <u>3</u> of <u>3</u>



February 21, 2018

Apex Environmental Management 7 Winchester Court Mauldin, SC 29662

CLIENT PROJECT: COS 773 Saxon Ave ACM/CBP; 0118-14 LAB CODE: T18-0285

CEI

Dear Customer:

Enclosed are asbestos analysis results for TEM bulk samples received at our laboratory on February 14, 2018. The samples were analyzed for asbestos using transmission electron microscopy (TEM) per Chatfield Method.

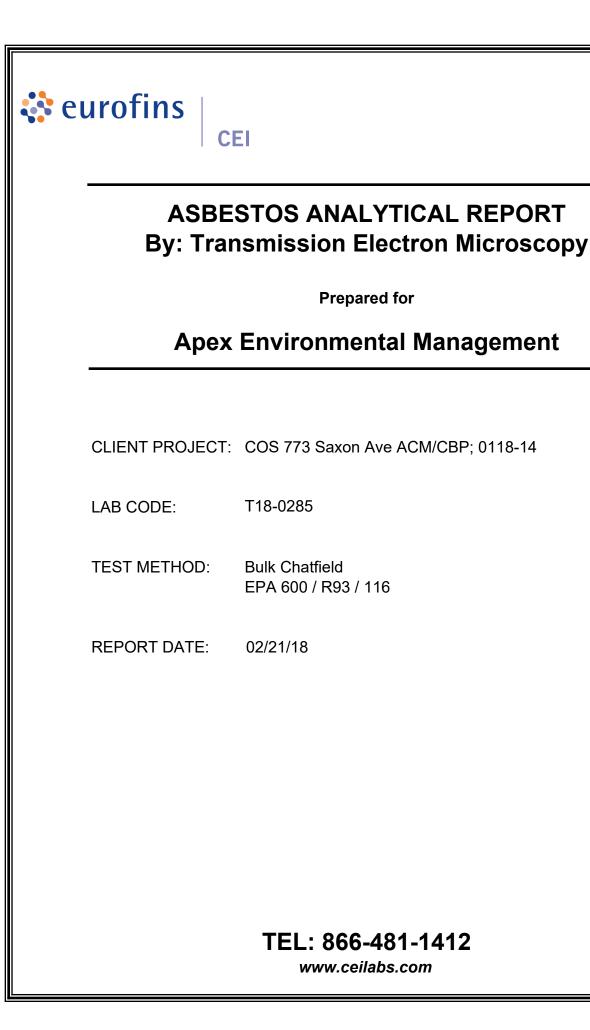
Sample results containing > 1% asbestos are considered asbestos-containing materials (ACMs) per the EPA regulatory requirements. The detection limit for the TEM Chatfield method is <1% depending on the processed weight and constituents of the sample.

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,

Man Sao De-

Tianbao Bai, Ph.D., CIH Laboratory Director





ASBESTOS BULK ANALYSIS

By: TRANSMISSION ELECTRON MICROSCOPY

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

Lab Code:	T18-0285
Date Received:	02-14-18
Date Analyzed:	02-19-18
Date Reported:	02-21-18

Project: COS 773 Saxon Ave ACM/CBP; 0118-14

CEI

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 T73903	Black Roof Shingle	0.447	20.8	41.6	37.6	None Detected
3 T73904	Black Roof Shingle	0.543	22.8	46.4	30.8	None Detected
3 T73905	Black Felt	0.371	96.8	1.3	1.9	None Detected
9 T73906	White Window Caulk	0.39	21.3	46.2	32.5	None Detected
15 T73907	Black Felt Paper	0.695	96.1	1.4	2.5	None Detected
18 T73908 *Probable cor	Black Mastic	0.36 r tile	61.4	12.5	26.1	<1% Chrysotile
31 T73909	Black Mastic Dots	0.353	39.1	22.7	38.2	None Detected
34 T73910	Clear Adhesive	0.122	58.2	22.1	19.7	None Detected
45 T73911	Beige, Paisley Vinyl Flooring	0.367	48.8	11.4	39.8	None Detected
48 T73912	Brown, Pattern Vinyl Flooring	0.381	63.8	31.2	5	None Detected
51 T73913	Yellow, Pattern Floor Tile	0.545	19.3	80.6	.1	None Detected
51 T73914	Clear Mastic	0.1	67	27	6	None Detected



ASBESTOS BULK ANALYSIS

By: TRANSMISSION ELECTRON MICROSCOPY

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

Lab Code:	T18-0285
Date Received:	02-14-18
Date Analyzed:	02-19-18
Date Reported:	02-21-18

Project: COS 773 Saxon Ave ACM/CBP; 0118-14

CEI

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 %
51 T73915	Orange, Pattern Floor Tile	0.463	44.1	24.4	31.5	None Detected
54 T73916	White, Blue Vinyl Flooring	0.262	85.5	8	6.5	None Detected
54 T73917	Beige Floor Tile	0.685	19.6	79.7	.7	None Detected
54 T73918	Clear Mastic	0.109	68.8	27.5	3.7	<1% Chrysotile



CEI

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

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monte **APPROVED BY: ANALYST:** Amanda Rucinski Tianbao Bai, Ph.D., CIH

Laboratory Director

T18-0285

T73903-918





ASBESTOS ASECTODY A2620917

730 SE Maynard Road, 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: 864-640-5127	
Address: 7 Winchester Ct.	Project Name: LOS 773 Saxon Ave AL	MICBA
Mauldin, South Carolina 29662	Project ID#: 0118 - 14	/ /
Email: toliverpapex-ehs.com	PO #:	
	STATE SAMPLES COLLECTED IN: SC	

IF TAT IS NOT MARKED STANDARD 3 DAY TAT APPLIES.

			TURN AROUND TIME				
ASBESTOS	METHOD	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						
PLM BULK	CARB 435						
PCM AIR	NIOSH 7400	1					
TEM AIR	EPA AHERA						
TEM AIR	NIOSH 7402						
TEM AIR	ISO 10312						
TEM AIR	ASTM 6281-09						
TEM BULK	CHATFIELD						
TEM DUST WIPE	ASTM D6480-05	aller and anot					
TEM DUST MICROVAC	ASTM D5755-09						
TEM SOIL	ASTM D7521-13						
TEM VERMICULITE	CINCINNATI METHOD						
OTHER:		6.000 cm 2.1912					

REMARKS / SPECIAL IN	ISTRUCTIONS:		1.0		
Positive stop a	inalysis		P	Accept 8	Samples
		-		Reject S	amples
Relinquished By:	Date/Time	Received By:		Date/	Time
	2-7-18				
Saunt Ceal	2-14-18 3:40pm	AR	3.6	18	9:36
Samples will be disposed of	f 30 days after analysis		Pa	ge	_of2

A8-2203

ASBESTOS SAMPLING FORM

T18-0285



Company: Apex Environmental M	Gragery un Job Contact: Tom Oliver
Project Name: COS 773 Saxon Auc	ACM/LBAD
Project ID #: 0118 - 14	Tel: 864-640-5127

SAMPLE ID#	DESCRIPTION / LOCATION	VOLUME/ AREA		≣ST
I			PLM	
2	Root Shingles (2) + felt (1)		PLM	TEM
3			PLM	TEM
4	Window glazing		PLM	TEM
5	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		PLM	
6			PLM	TEM
7	Window Caulle		PLM	TEM
ø			PLM	TEM
9			PLM	TEM
10	Cement board Siding		PLM	TEM T
1(PLM	
(2	l		PLM	TEM
13	Felt paper beneath comment		PLM	TEM
14	board siding 1		PLM	TEM
(5			PLM	TEM
15	Black Mastin on root		PLM	ТЕМ
12	flashing 1		PLM	ТЕМ
18			PLM	TEM
19	prywall with joint		PLM	TEM
20	prywall with joint		PLM	TEM
21			PLM	TEM
22 23			PLM	TEM
23			PLM	ТЕМ
24	Plaster with finish		PLM	TEM
25			PLM	TEM
26			PLM	TEM
27 28			PLM	TEM
28			PLM	TEM

Page _ 2_ of _ 3___

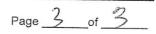
A8-2207

ASBESTOS SAMPLING FORM

718-0285

COMPANY CONTACT INFORMATION	
Company: Apex Environ mental Management	Job Contact: Tom Oliver
Project Name: COS 773 Saxon Ave Acm/LBP	
Project ID #: 011 8-14	Tel: 864-640-5127

		VOLUME/		
SAMPLE ID#	DESCRIPTION / LOCATION	AREA		EST
29	Blauk mastic dots		PLM	TEM
30	beneath drynch month		PLM	TEM
31			PLM	TEM _
32	12"x 12" brown thin!		PLM	TEM
33	pattern Floor tile +		PLM	TEM
34	adhesive 1		PLM	TEM
35	Wall texture		PLM	TEM
310			PLM	TEM
37			PLM	TEM
38			PLM	TEM
39			PLM	TEM
40	Yellow pattern viny/		PLM	ТЕМ
41	floor with no mastic		PLM	TEM
42			PLM	TEM
43	Beige paisley pattern		PLM	TEM
44	viny Floor with		PLM	TEM
45	ho mastin		PLM	TEM
46	Brown pattern viry/ Floor with no mastic		PLM	ТЕМ
47	Floor with no mostic		PLM	TEM
48			PLM	TEM
49	Yellow pattern floor tike		PLM	TEM
50	& Mastic Over \$ 2 2 layer		PLM	TEM
51	ot viny floor who master		PLM	TEM
52	Multiple layers of		PLM	TEM
53	viny/ floor with thith		PLM	TEM
54	no mastics		PLM	TEM
			PLM	TEM
			PLM	TEM





SECTION IV

Photographic Log

Asbestos & Lead Assessment City of Spartanburg 773 Saxon Avenue Spartanburg, South Carolina



Photo 1 – 773 Saxon Avenue in Spartanburg, South Carolina.

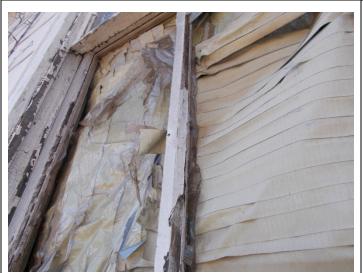


Photo 3 – Wooden windows with glazing.



Photo 5 – Cement board siding with felt beneath.





Photo 4 – Wooden windows with caulk.



Photo 6 – Black mastic on roof flashing.

Asbestos & Lead Assessment City of Spartanburg 773 Saxon Avenue Spartanburg, South Carolina



Photo 7 – Drywall with joint compound & tape.



Photo 9 - Black mastic dots behind drywall walls.



Photo 8 – Plaster with finish.



Photo 10 - 12" x 12" brown thin pattern floor tile & adhesive in the main hallway.



Photo 11 – Wall texture in the main hallway, front left & right bedrooms & kitchen.



Photo 12 – Yellow pattern vinyl floor with no mastic in the front right bedroom under carpet.

Asbestos & Lead Assessment City of Spartanburg 773 Saxon Avenue Spartanburg, South Carolina



Photo 13 – Beige paisley pattern vinyl floor with no mastic in the dining room in front of the kitchen.

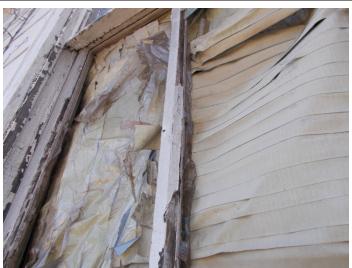


Photo 15 – Yellow pattern floor tile & mastic over yellow pattern vinyl floor with no mastic in the kitchen (under wood).



Photo 14 – Brown pattern vinyl floor with no mastic in the kitchen (top layer).



Photo 16 - 3 layers of vinyl flooring with & without mastics in the back damaged area.



Photo 17 – Back damaged area.



Photo 18 – Typical view inside.

SECTION V

SC DHEC Asbestos Inspector License

SCDHEC ISSUED Asbestos ID Card

CONSULTBI

Thomas H Oliver



Expiration Date: 03/17/18 AIRSAMPLER AS-00202 BI-00680 01/18/19

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

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

For information of corrections contact: SCDHEC – Asbestos Section

2600 Bull Street Columbia, SC 29201 (803) 898-4289