



Asbestos & Lead Based Paint Assessment

City of Spartanburg
106 Norris Street
Spartanburg, South Carolina 29306

Prepared for:

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

Prepared by:

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

Project Number: 0120-17

April 29, 2020





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Apex Project Number 0120-17

April 29, 2020

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

Reference: Asbestos and Lead-Based Paint Assessment Services
106 Norris Street
Spartanburg, South Carolina 29306

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
Vice President

Appendices

ASBESTOS AND LEAD BASED PAINT ASSESSMENT

**CITY OF SPARTANBURG
106 NORRIS STREET
SPARTANBURG, SOUTH CAROLINA 29306**

APEX PROJECT NO. 0120-17

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SECTION I

Asbestos & Lead Evaluation Report

ASBESTOS EVALUATION REPORT APEX PROJECT NUMBER: 0120-17
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Date:	4/29/2020	Page Number:	1 of 4
Client:	City of Spartanburg	Client Contact:	Mr. Jeff Tillerson
Client Address:	440 South Church Street Suite B Spartanburg, SC 29306	Client Phone Number:	(864) 596-2911
Project:	Asbestos Evaluation and Lead Based Paint Assessment		
Property Address:	106 Norris Street Spartanburg, SC 29306		
Assessor:	Tom Oliver	Date of Assessment:	4/13/2020
Company:	Apex Environmental Management 7 Winchester Court Mauldin, SC 29662	Phone Number:	(864) 404-3210
Purpose of Assessment:	Demolition	Age of Structure:	Approximately 90 years
Building Type:	Residential	Number of Stories:	1
Foundation:	CMU block crawlspace	Approximate Square Footage	1,100 SF

EXTERIOR BUILDING MATERIALS

- Pitched wooden roof with shingles & felt.
- Wooden siding.
- Aluminum siding.
- Wooden windows.
- Wooden doors.
- Windows & doors are covered by wooden boards.
- Fire damage throughout the exterior.
- Limited sampling was performed.

INTERIOR BUILDING MATERIALS

- Interior building materials were not assessed due to fire & structural damage within the residence.
- Due to safety concerns no asbestos samples were collected from within the residence.
- Debris throughout the residence is considered to be contaminated with 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 EMSL Analytical, Inc. (EMSL) as an NVLAP certified laboratory, their accreditation number is 200841-0.
- Transmission electron microscopy (TEM) analysis of non-friable organically bound materials suspected to contain asbestos and testing negatively by PLM analysis.
- Lead inspection by a lead inspector certified by the Environmental Protection Agency and licensed to conduct LBP surveys in South Carolina.
- In situ analysis of suspected lead based paints by X-ray fluorescence (XRF).
- Presenting the results in a report identifying confirmed ACMs and LBPs.

METHODS

Asbestos Containing Materials

In order to determine if the suspect materials observed during the visual survey contained asbestos, representative bulk samples were collected and placed in sealed packages. Three (3) bulk samples were collected during the survey and submitted to EMSL in Pineville, North Carolina for analysis using the EPA recommended method of Polarized Light Microscopy (PLM) coupled with dispersion staining (Method No. EPA 600/M4-82-020, Dec. 1982). EMSL participates in the National Voluntary Laboratory Accreditation Program (NVLAP). Their NVLAP accreditation number is 200841-0. EPA regulations require that multiple samples of each homogeneous material be collected for laboratory analysis. Six (6) samples were analyzed due to layering by PLM and positive stop methods. In accordance with South Carolina Regulation 61-86.1, non-friable organically bound materials that are reported to be non-asbestos containing by PLM analysis must also be analyzed by Transmission Electron Microscopy (TEM). Three (3) 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.

The residence has fire and structural damage throughout the interior and exterior. A limited assessment was conducted due to safety concerns. Apex recommends that the residence be demolished in place and materials be treated and disposed of as friable, regulated ACM.

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

- Approximately 1,100 SF contaminated and unassessed debris within the residence and associate debris piles.

Lead Based Paint

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

Currently, EPA defines LBP as paint containing in excess of, or equal to, $1.0 \text{ mg}/\text{cm}^2$. *XRF LBP Data Sheets* providing XRF results for testing combinations can be found in the Appendices at the conclusion of this report. Paint-chip sampling was not required for XRF inconclusive values.

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

Exterior:

- Gray wooden siding.
- White wooden roof overhang.
- White wooden roof overhang framing.

Interior:

- The interior of the residence was not assessed due to safety concerns. Interior materials should be assumed to be LBP.

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. 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.
2. Follow applicable asbestos regulations during renovation or demolition of the structure. You should be aware that stringent requirements are imposed upon anyone renovating or demolishing a structure in which ACM will be disturbed. This work must be performed in accordance with OSHA asbestos regulations, 29 CFR 1910 & 1926, and NESHAP asbestos regulations 40 CFR 61, subpart M. South Carolina regulations require the accreditation of personnel who work in the asbestos field and notification and permitting fees for asbestos removal projects. There is a 10 working day notification period required prior to abatement of

asbestos in a facility. Failure to take proper precautions and actions to protect human health and the environment can result in penalties, danger to personnel, and construction delays.

Lead-Based Paint

Currently the Environmental Protection Agency (EPA) define LBP as paint containing greater than 1.0 milligrams per square centimeter (mg/cm^2) lead or in excess of, or equal to, 0.5 percent lead. Building materials identified as being painted with LBP should be segregated from the other building materials and recycled or disposed of in a municipal lined landfill. The removed wastes would need to be containerized and further tested by Toxic Characteristic Leaching procedures (TCLP) to determine if the waste is classified as hazardous. The remaining building materials that are not painted with LBP may be disposed of in a construction and demolition landfill. However, the landfills should be contacted to determine their specific disposal requirements.

Occupational Safety and Health Administration Lead Regulations apply to actions initiated on lead containing materials. This regulation applies to lead concentrations greater than the analytical limit of detection. This regulation sets exposure levels on airborne lead and does not reference the percent lead in paint. Therefore, initial personal air monitoring should be conducted on workers performing work on surfaces which have a lead concentration of $0.1 \text{ mg}/\text{cm}^2$ or above to satisfy the OSHA requirements. If a baseline exposure lower than the OSHA Action Level of 30 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) is established, personal air monitoring may be terminated. The full OSHA lead standard should be referenced for compliance.

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

SECTION II

Asbestos & LBP Data Tables

**ASBESTOS SURVEY FIELD DATA SHEET
PLM & TEM ANALYSIS**

Project Name: COS 106 Norris Street NIP ACM-LBP

Sampled By: Tom Oliver

Project Location: 106 Norris Street, Spartanburg, SC 29306

Project Manager: Tom Oliver

Project Number: 0120-17

Date: 4/13/2020

Sample No.	Location	Sample Description	Analytical Results	Friable/Non Friable	Condition	Quantity
1	Roof	Roofing shingles (2 layer) & felt (1 layer)	PLM - NAD	Friable	Significantly Damaged	1,350 SF
2			TEM - NAD			
3						
Assumed	House/debris piles	House/debris piles	Assumed	Friable	Significantly Damaged	1,100 SF

NAD = No Asbestos Detected

LF = Linear Feet

EA = Each

Bold = Positive For Asbestos

SF = Square Feet

Chry = Chrysotile

**FIELD DATA SHEET
XRF LBP ANALYSIS**

Project Name: COS 106 Norris Street NIP ACM-LBP

Sampled By: Tom Oliver

Project Location: 106 Norris Street, Spartanburg, SC 29306

Project Manager: Tom Oliver

Project Number: 0120-17

Date: 4/13/2020

Sample No.	Sample Location	Component	Color	Substrate	Analytical Result (mg/m ³)
1		Standardization			186.00/PASS
2		Calibration			1.08
3		Calibration			1.25
4		Calibration			1.27
5	Exterior	Siding	Gray	Wood	1.58
6	Exterior	Window shutter	Brown	Wood	0.00
7	Exterior	Front porch column	Gray	Wood	0.00
8	Exterior	Front porch floor	Tan	Concrete	0.00
9	Exterior	Roof overhang	Gray	Wood	3.20
10	Exterior	Roof overhang frame	Gray	Wood	2.29
11		Calibration			1.11
12		Calibration			1.19
13		Calibration			1.12

Bold = LBP

SECTION III

Laboratory Analytical Results



EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

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

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

EMSL Order: 412003475

Customer ID: AXEM25

Customer PO:

Project ID: City of Spartanburg

Attention: Tom Oliver
Apex Environmental Management
7 Winchester Court
Mauldin, SC 29662

Phone: (864) 640-5274

Fax:

Received Date: 04/14/2020 9:00 AM

Analysis Date: 04/18/2020

Collected Date: 04/13/2020

Project: 0120-17 COS 106 Norris Street (City of Spartanburg)

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
1-Shingle 1 <small>412003475-0001</small>	Roof Shingles (2 Layers) & Felt (1 Layer)	Black Fibrous Homogeneous	15% Glass	8% Quartz 10% Ca Carbonate 67% Non-fibrous (Other)	None Detected
1-Shingle 2 <small>412003475-0001A</small>	Roof Shingles (2 Layers) & Felt (1 Layer)	Black Fibrous Homogeneous	8% Glass	8% Quartz 10% Ca Carbonate 74% Non-fibrous (Other)	None Detected
1-Felt <small>412003475-0001B</small>	Roof Shingles (2 Layers) & Felt (1 Layer)	Black Fibrous Homogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected
2-Shingle 1 <small>412003475-0002</small>	Roof Shingles (2 Layers) & Felt (1 Layer)	Black Fibrous Homogeneous	10% Glass	10% Quartz 10% Ca Carbonate 70% Non-fibrous (Other)	None Detected
2-Shingle 2 <small>412003475-0002A</small>	Roof Shingles (2 Layers) & Felt (1 Layer)	Black Fibrous Homogeneous	10% Glass	10% Quartz 10% Ca Carbonate 70% Non-fibrous (Other)	None Detected
2-Felt <small>412003475-0002B</small>	Roof Shingles (2 Layers) & Felt (1 Layer)	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected

Analyst(s)

Aaron Hartley (3)

Lacy Searcy (3)

Lee Plumley, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

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

Initial report from: 04/20/2020 08:24:42



EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

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

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

EMSL Order: 412003475

Customer ID: AXEM25

Customer PO:

Project ID: City of Spartanburg

Attention: Tom Oliver
Apex Environmental Management
7 Winchester Court
Mauldin, SC 29662

Phone: (864) 640-5274

Fax:

Received Date: 04/14/2020 9:00 AM

Analysis Date: 04/21/2020

Collected Date: 04/13/2020

Project: 0120-17 COS 106 Norris Street (City of Spartanburg)

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
3-Shingle 1 412003475-0003	Roof Shingles (2 Layers) & Felt (1 Layer)	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
3-Shingle 2 412003475-0004	Roof Shingles (2 Layers) & Felt (1 Layer)	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
3-Felt 412003475-0005	Roof Shingles (2 Layers) & Felt (1 Layer)	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)

Derrick Young (3)

Lee Plumley, Laboratory Manager
or other approved signatory

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

Samples analyzed by EMSL Analytical, Inc. Pineville, NC

Initial report from: 04/22/2020 08:15:29



EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(lab use only)*:

412003475

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

Company Name : Apex Environmental Management, Inc.		EMSL Customer ID:	
Street: 7 Winchester Court		City: Mauldin	State or Province: SC
Zip/Postal Code: 29662	Country: US	Telephone #: 864-404-3210	Fax #: 864-404-3213
Report To (Name): Tom Oliver		Please Provide Results via: <input type="checkbox"/> Fax <input type="checkbox"/> Email	
email Address: tolover@apex-ehs.com		Purchase Order Number:	
Client Project ID: 0120-17 COS 106 Norris Street		EMSL Project ID <i>(internal use only)</i> :	
State or Province Collected: SC		CT only <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	
EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different - <i>If bill to is different note instructions in comment. Third party billing requires written authorization from third party</i>			
Turnaround Time (TAT) Options Please Check			
<input type="checkbox"/> 3 Hour	<input type="checkbox"/> 6 Hour	<input type="checkbox"/> 24 Hour	<input type="checkbox"/> 32 Hour* <input type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input checked="" type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week
*32 Hour TAT available for select tests only; samples must be submitted by 11:30am. Please call ahead for large projects and/or turnaround times 6 hours or less.			
PLM - Bulk (reporting limit)		TEM - Bulk	
<input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) <input type="checkbox"/> NIOSH 9002 (<1%) <input type="checkbox"/> NY ELAP Method 198.1- friable - NY <input type="checkbox"/> NY ELAP Method 198.6 NOB- non-friable - NY <input type="checkbox"/> NY ELAP Method 198.8- Vermiculite Surfacing Material <input type="checkbox"/> OSHA ID-191 Modified <input type="checkbox"/> EMSL Standard Addition Method		<input checked="" type="checkbox"/> TEM EPA NOB - EPA 600/R-93/116 Section 2.5.5.1 <input type="checkbox"/> NY ELAP Method 198.4 non-friable - NY <input type="checkbox"/> Chatfield Protocol (semi-quantitative) <input type="checkbox"/> TEM % by Mass - EPA 600/R-93/116 Section 2.5.5.2 <input type="checkbox"/> TEM Qualitative via Filtration Prep Technique <input type="checkbox"/> TEM Qualitative via Drop Mount Prep Technique Other tests (please specify) <input type="checkbox"/>	
<input checked="" type="checkbox"/> Positive Stop - Clearly Identify Homogenous Areas (HA)		Date Sampled: 4-13-2020	
Sampler's Name: Tom Oliver		Sampler's Signature:	
Sample #	HA #	Sample Location	Material Description
1		Roof Shingles (2 layers) + felt (1 layer)	PLM
2			↓
3			TEM
Client Sample # (s): 1-3		Total # of Samples: 3	
Relinquished by (Client):		Date: 4-13-2020	Time: 1:30 PM
Received by (Lab):		Date: 4/14/20	Time: 9AM EMSL Flx
Comments/Special Instructions: Positive stop.		7958 5032 0933	

SECTION IV
Photographic Log



Photo 1 – 106 Norris Street in Spartanburg, South Carolina.



Photo 2 – Typical view of fire & structural damage throughout the interior.



Photo 3 – Typical view of fire & structural damage throughout the interior.



Photo 4 – Typical view of fire & structural damage throughout the exterior.



Photo 5 – Typical view of fire & structural damage throughout the exterior.



Photo 6 – Roof shingles & felt

SECTION V

SC DHEC Asbestos Inspector License

SCDHEC ISSUED

Asbestos ID Card

Thomas H Oliver



AIRSAMPLER AS-00202
CONSULTBI BI-00680

Expiration Date:

05/08/20
01/14/21

This card is nontransferable and becomes 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