



Asbestos & Lead Based Paint Assessment

City of Spartanburg
147 Princeton 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

February 10, 2020





Apex Project Number 0120-17

February 10, 2020

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

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

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

SERVICES

- Indoor Air Quality
- Mold Remediation
- Asbestos & Lead
- Industrial Hygiene
- Worker Health & Safety
- Mold Consulting
- Moisture Management Plans
- Safety Assessment
- Environmental Site Assessments
- Hazard Communication

Dear Mr. 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.

A handwritten signature in blue ink, appearing to read 'S. Hamby'.

Stephanie Hamby
Field Scientist

A handwritten signature in blue ink, appearing to read 'Tom Oliver'.

Tom Oliver
Vice President

Appendices

ASBESTOS AND LEAD BASED PAINT ASSESSMENT

**CITY OF SPARTANBURG
147 PRINCETON 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 |
|--|

| | | | |
|------------------------|--|----------------------------|-------------------------|
| Date: | 2/10/2020 | 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: | 147 Princeton Street Spartanburg, SC 29306 | | |
| Assessor: | Ted Shultz | Date of Assessment: | 1/08/2020 |
| Company: | Apex Environmental Management 7 Winchester Court Mauldin, SC 29662 | Phone Number: | (864) 404-3210 |
| Purpose of Assessment: | Demolition | Age of Structure: | Approximately 50+ years |
| Building Type: | Residential | Number of Stories: | 1 |
| Foundation: | Brick Crawlspace | Approximate Square Footage | 1,600 SF |

EXTERIOR BUILDING MATERIALS

- Wood siding with black felt beneath.
- Shingled roof.
- Metal windows.
- Wood windows.
- Metal doors.
- Wood door.
- Window glazing.
- Window caulk.
- 2 chimney's with tar – assumed.

INTERIOR BUILDING MATERIALS

- Carpet.
- Plaster walls and ceilings.
- Wood floors.
- Roll vinyl floors.
- Wood paneling.
- Tile flooring.

SCOPE OF THE SURVEY

The objectives of the asbestos and lead assessment included the following:

- Identification of suspect asbestos-containing material (ACM) and lead based paints (LBP) in readily observable locations. Limited demolition of building finishes was conducted.
- Asbestos survey with sample collection by a South Carolina accredited inspector.
- Suspect ACM analysis by polarized light microscopy (PLM) utilizing EMSL Analytical, Inc. (EMSL) as an NVLAP certified laboratory, their accreditation number is 200841-0.
- Transmission electron microscopy (TEM) analysis of non-friable organically bound materials suspected to contain asbestos and testing negatively by PLM analysis.
- Lead inspection by a lead inspector certified by the Environmental Protection Agency and licensed to conduct LBP surveys in South Carolina.
- In situ analysis of suspected lead based paints by X-ray fluorescence (XRF).
- Presenting the results in a report identifying confirmed ACMs and LBPs.

METHODS

Asbestos Containing Materials

In order to determine if the suspect materials observed during the visual survey contained asbestos, representative bulk samples were collected and placed in sealed packages. Twenty-three (23) 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. Thirty-two (32) 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). Eight (8) 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. Provided below is a general discussion of the asbestos containing materials identified in the residence. 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 120 SF of 12"x12" grey self-stick floor tile in the kitchen.

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:

- White wood porch columns.
- White wood porch ceiling.
- White wood porch headers.
- White wood siding.

Interior:

- Brown and orange drywall walls.

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 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 147 Princeton Street NIP ACM-LBP

Sampled By: Ted Shultz

Project Location: 147 Princeton Street, Spartanburg, SC 29306

Project Manager: Ted Shultz

Project Number: 0120-17

Date: 1/8/2020

| Sample No. | Location | Sample Description | Analytical Results | Friable/Non Friable | Condition | Quantity |
|----------------|--------------------|---|----------------------------|---------------------|-------------|---------------|
| 1 | Roof | Roofing (1 shingle, 3 felt) | PLM - NAD | Non-friable | Good | 1,850 SF |
| 2 | | | TEM - NAD | | | |
| 3 | | | TEM - NAD | | | |
| 4 | Windows | Caulk | PLM - NAD | Non-friable | Good | 12 EA |
| 5 | | | TEM - NAD | | | |
| 6 | | | TEM - NAD | | | |
| 7 | Windows | Glazing | PLM - NAD | Non-friable | Good | 12 EA |
| 8 | | | TEM - NAD | | | |
| 9 | | | TEM - NAD | | | |
| 10 | Ext. siding | Black felt | PLM - NAD | Non-friable | Good | 4,200 SF |
| 11 | | | TEM - NAD | | | |
| 12 | | | TEM - NAD | | | |
| 13 | Kitchen | 12"x12" grey self stick floor tile | PLM - 3% Chrysotile | Non-friable | Good | 120 SF |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | Half bath | Tan 12"x12" self stick | PLM - NAD | Non-friable | Good | 30 SF |
| 17 | | | TEM - NAD | | | |
| 18 | | | TEM - NAD | | | |
| 19 | Walls & Ceiling | Plaster with finish over unfinished drywall | PLM - NAD | Friable | Good | 4,400 SF |
| 20 | | | | | | |
| 21 | | | | | | |
| 22 | | | | | | |
| 23 | | | | | | |
| Assumed | 2 Chimney's | Chi,mney tar | Assumed | Non-friable | Good | 12 LF |

NAD = No Asbestos Detected

LF = Linear Feet

EA = Each

Bold = Positive For Asbestos

SF = Square Feet

Chry = Chrysotile

**FIELD DATA SHEET
LBP ANALYSIS**

Project Name: COS 147 Princeton Street NIP ACM-LBP

Sampled By: Tom Oliver

Project Location: 147 Princeton Street, Spartanburg, SC 29306

Project Manager: Tom Oliver

Project Number: 0120-17

Date: 1/30/2020

| Sample No. | Sample Location | Component | Color | Substrate | Analytical Result (mg/m ³) |
|------------|-----------------|----------------------|---------------|----------------|--|
| 116 | Exterior | Door | White | Wood | 0.00 |
| 117 | Exterior | Door Frame | White | Wood | 0.00 |
| 118 | Exterior | Window | White | Wood | 0.00 |
| 119 | Exterior | Window Frame | White | Wood | 0.00 |
| 120 | Exterior | Window Frame | Green | Wood | 0.00 |
| 121 | Exterior | Siding | Yellow | Wood | 0.00 |
| 122 | Exterior | Porch Column | White | Wood | 2.50 |
| 123 | Exterior | Porch Ceiling | White | Wood | 2.87 |
| 124 | Exterior | Porch Header | White | Wood | 1.79 |
| 125 | Exterior | Siding | White | Wood | 1.74 |
| 126 | Exterior | Foundation | Red | Brick | 0.00 |
| 127 | Interior | Wall | Brown | Drywall | 1.00 |
| 128 | Interior | Window | White | Wood | 0.25 |
| 129 | Interior | Window Frame | White | Wood | 0.50 |
| 130 | Interior | Base Board | White | Wood | 0.22 |
| 131 | Interior | Door | White | Wood | 0.11 |
| 132 | Interior | Door Frame | White | Wood | 0.51 |
| 133 | Interior | Wall | Orange | Drywall | 1.00 |
| 134 | Interior | Cabinets | White | Wood | 0.64 |
| 135 | Interior | Cabinets | Tan | Wood | 0.00 |
| 136 | Interior | Wall | Purple | Drywall | 0.19 |
| 137 | Interior | Wall | Brown | Drywall | 1.00 |
| 138 | Interior | Fireplace | White | Wood | 0.02 |

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: 412000540

Customer ID: AXEM25

Customer PO:

Project ID: City of Spartanburg

Attention: Stephanie Hamby
Apex Environmental Management
7 Winchester Court
Mauldin, SC 29662

Phone: (864) 640-5274

Fax:

Received Date: 01/17/2020 8:45 AM

Analysis Date: 01/22/2020 - 01/23/2020

Collected Date: 01/08/2020

Project: COS 147 Princeton St (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 <small>412000540-0001</small> | Roof - 1 Shingle, 3 Felt | Gray/Black Fibrous Homogeneous | <1% Cellulose 5% Glass | 95% Non-fibrous (Other) | None Detected |
| 1-Felt 1 <small>412000540-0001A</small> | Roof - 1 Shingle, 3 Felt | Black Fibrous Homogeneous | 65% Cellulose | 35% Non-fibrous (Other) | None Detected |
| 1-Felt 2 <small>412000540-0001B</small> | Roof - 1 Shingle, 3 Felt | Black Fibrous Homogeneous | 65% Cellulose | 35% Non-fibrous (Other) | None Detected |
| 1-Felt 3 <small>412000540-0001C</small> | Roof - 1 Shingle, 3 Felt | Black Fibrous Homogeneous | 65% Cellulose | 35% Non-fibrous (Other) | None Detected |
| 2-Shingle <small>412000540-0002</small> | Roof - 1 Shingle, 3 Felt | Gray/Black Fibrous Heterogeneous | <1% Cellulose 8% Glass | 92% Non-fibrous (Other) | None Detected |
| 2-Felt 1 <small>412000540-0002A</small> | Roof - 1 Shingle, 3 Felt | Black Fibrous Homogeneous | 65% Cellulose | 35% Non-fibrous (Other) | None Detected |
| 2-Felt 2 <small>412000540-0002B</small> | Roof - 1 Shingle, 3 Felt | Black Fibrous Homogeneous | 65% Cellulose | 35% Non-fibrous (Other) | None Detected |
| 2-Felt 3 <small>412000540-0002C</small> | Roof - 1 Shingle, 3 Felt | Black Fibrous Homogeneous | 65% Cellulose | 35% Non-fibrous (Other) | None Detected |
| 4 <small>412000540-0003</small> | Windows - Caulk | Tan Non-Fibrous Homogeneous | <1% Cellulose | 5% Ca Carbonate 95% Non-fibrous (Other) | None Detected |
| 5 <small>412000540-0004</small> | Windows - Caulk | Tan/Beige Non-Fibrous Homogeneous | <1% Cellulose | 5% Ca Carbonate 95% Non-fibrous (Other) | None Detected |
| 7 <small>412000540-0005</small> | Windows - Glazing | Tan Non-Fibrous Homogeneous | <1% Cellulose | 10% Ca Carbonate 90% Non-fibrous (Other) | None Detected |
| 8 <small>412000540-0006</small> | Windows - Glazing | White/Beige Non-Fibrous Homogeneous | <1% Cellulose | 10% Ca Carbonate 90% Non-fibrous (Other) | None Detected |
| 10 <small>412000540-0007</small> | Exterior Siding - Black Felt | Black Fibrous Homogeneous | 60% Cellulose | 40% Non-fibrous (Other) | None Detected |
| 11 <small>412000540-0008</small> | Exterior Siding - Black Felt | Black Fibrous Homogeneous | 60% Cellulose | 40% Non-fibrous (Other) | None Detected |
| 13 <small>412000540-0009</small> | Kitchen - 12 x 12 Grey Self Stick Floor Tile | Gray/Tan Fibrous Homogeneous | | 20% Quartz 77% Non-fibrous (Other) | 3% Chrysotile |
| 14 <small>412000540-0010</small> | Kitchen - 12 x 12 Grey Self Stick Floor Tile | | | | Positive Stop (Not Analyzed) |

Initial report from: 01/23/2020 16:00:38



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: 412000540
Customer ID: AXEM25
Customer PO:
Project ID: 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 |
| 16 412000540-0011 | 1/2 Bath - Tan 12 x 12 Self Stick | Tan/Black Non-Fibrous Homogeneous | | 25% Quartz 75% Non-fibrous (Other) | None Detected |
| 17 412000540-0012 | 1/2 Bath - Tan 12 x 12 Self Stick | Black/Beige Non-Fibrous Homogeneous | | 20% Quartz 80% Non-fibrous (Other) | None Detected |
| 19-Drywall 412000540-0013 | Ceiling & Walls Throughout - Plaster w/ Finish Over Unfinished Drywall | Gray Fibrous Homogeneous | 20% Cellulose | 80% Non-fibrous (Other) | None Detected |
| 19-Skim Coat 412000540-0013A | Ceiling & Walls Throughout - Plaster w/ Finish Over Unfinished Drywall | White Non-Fibrous Homogeneous | <1% Cellulose | 10% Quartz 90% Non-fibrous (Other) | None Detected |
| 19-Rough Coat 412000540-0013B | Ceiling & Walls Throughout - Plaster w/ Finish Over Unfinished Drywall | Gray/Tan Non-Fibrous Homogeneous | <1% Cellulose | 35% Quartz 10% Ca Carbonate 55% Non-fibrous (Other) | None Detected |
| 20-Drywall 412000540-0014 | Ceiling & Walls Throughout - Plaster w/ Finish Over Unfinished Drywall | Gray Fibrous Homogeneous | 20% Cellulose | 80% Non-fibrous (Other) | None Detected |
| 20-Skim Coat 412000540-0014A | Ceiling & Walls Throughout - Plaster w/ Finish Over Unfinished Drywall | Gray/White Non-Fibrous Homogeneous | <1% Cellulose | 10% Ca Carbonate 90% Non-fibrous (Other) | None Detected |
| 20-Rough Coat 412000540-0014B | Ceiling & Walls Throughout - Plaster w/ Finish Over Unfinished Drywall | Gray/Tan Non-Fibrous Homogeneous | <1% Cellulose | 40% Quartz 10% Ca Carbonate 50% Non-fibrous (Other) | None Detected |
| 21-Drywall 412000540-0015 | Ceiling & Walls Throughout - Plaster w/ Finish Over Unfinished Drywall | Gray Fibrous Homogeneous | 10% Cellulose | 90% Non-fibrous (Other) | None Detected |
| 21-Skim Coat 412000540-0015A | Ceiling & Walls Throughout - Plaster w/ Finish Over Unfinished Drywall | Gray Non-Fibrous Homogeneous | <1% Cellulose | 10% Ca Carbonate 90% Non-fibrous (Other) | None Detected |
| 21-Rough Coat 412000540-0015B | Ceiling & Walls Throughout - Plaster w/ Finish Over Unfinished Drywall | Gray/Tan Non-Fibrous Homogeneous | <1% Cellulose | 35% Quartz 10% Ca Carbonate 55% Non-fibrous (Other) | None Detected |
| 22-Drywall 412000540-0016 | Ceiling & Walls Throughout - Plaster w/ Finish Over Unfinished Drywall | Gray Fibrous Homogeneous | 10% Cellulose | 90% Non-fibrous (Other) | None Detected |
| 22-Skim Coat 412000540-0016A | Ceiling & Walls Throughout - Plaster w/ Finish Over Unfinished Drywall | Gray Non-Fibrous Homogeneous | <1% Cellulose | 10% Ca Carbonate 90% Non-fibrous (Other) | None Detected |
| 22-Rough Coat 412000540-0016B | Ceiling & Walls Throughout - Plaster w/ Finish Over Unfinished Drywall | Gray/Tan Non-Fibrous Homogeneous | <1% Cellulose | 35% Quartz 5% Ca Carbonate 60% Non-fibrous (Other) | None Detected |
| 23-Drywall 412000540-0017 | Ceiling & Walls Throughout - Plaster w/ Finish Over Unfinished Drywall | Brown/Gray Fibrous Heterogeneous | 12% Cellulose | 88% Non-fibrous (Other) | None Detected |

Initial report from: 01/23/2020 16:00:38



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: 412000540
Customer ID: AXEM25
Customer PO:
Project ID: 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 |
| 23-SkimCoat <small>412000540-0017A</small> | Ceiling & Walls Throughout - Plaster w/ Finish Over Unfinished Drywall | Gray/Variou Non-Fibrous Heterogeneous | <1% Cellulose | 15% Ca Carbonate 85% Non-fibrous (Other) | None Detected |
| 23-Rough Coat <small>412000540-0017B</small> | Ceiling & Walls Throughout - Plaster w/ Finish Over Unfinished Drywall | Gray Non-Fibrous Heterogeneous | <1% Cellulose | 30% Quartz 70% Non-fibrous (Other) | None Detected |

Analyst(s) _____

Cameron Evans (21)

Ryan Rains (11)

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. Kernersville, NC NVLAP Lab Code 102104-0, CA ELAP 2689, Virginia 3333-000228, West Virginia LT000321

Initial report from: 01/23/2020 16:00:38



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: 412000540

Customer ID: AXEM25

Customer PO:

Project ID: City of Spartanburg

Attention: Stephanie Hamby
Apex Environmental Management
7 Winchester Court
Mauldin, SC 29662

Phone: (864) 640-5274

Fax:

Received Date: 01/17/2020 8:45 AM

Analysis Date: 01/28/2020

Collected Date: 01/08/2020

Project: COS 147 Princeton St (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 412000540-0018 | Roof - 1 Shingle, 3 Felt | Gray/Black Fibrous Heterogeneous | 100.0 Other | None | No Asbestos Detected |
| 3-Felt 1 412000540-0019 | Roof - 1 Shingle, 3 Felt | Black Fibrous Homogeneous | 100.0 Other | None | No Asbestos Detected |
| 3-Felt 2 412000540-0020 | Roof - 1 Shingle, 3 Felt | Black Fibrous Homogeneous | 100.0 Other | None | No Asbestos Detected |
| 3-Felt 3 412000540-0021 | Roof - 1 Shingle, 3 Felt | Black Fibrous Homogeneous | 100.0 Other | None | No Asbestos Detected |
| 6 412000540-0022 | Windows - Caulk | White Non-Fibrous Homogeneous | 100.0 Other | None | No Asbestos Detected |
| 9 412000540-0023 | Windows - Glazing | Tan/White Non-Fibrous Homogeneous | 100.0 Other | None | No Asbestos Detected |
| 12 412000540-0024 | Exterior Siding - Black Felt | Brown/Black Fibrous Homogeneous | 100.0 Other | None | No Asbestos Detected |
| 18 412000540-0025 | 1/2 Bath - Tan 12 x 12 Self Stick | Tan/Black Non-Fibrous Heterogeneous | 100.0 Other | None | No Asbestos Detected |

Analyst(s)

Stephen Bennett (8)

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. Kernersville, NC

Initial report from: 01/28/2020 10:57:08



EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

412000540

Pineville, NC 28134
PHONE: (704) 525-2205
FAX: (704) 525-2382

| | | | |
|---|--------------------|---|-----------------|
| Company : Apex Environmental Management | | EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different <small>If Bill to is Different note instructions in Comments**</small> | |
| Street: 7 Winchester Court | | <i>Third Party Billing requires written authorization from third party</i> | |
| City: Mauldin | State/Province: SC | Zip/Postal Code: 29662 | Country: US |
| Report To (Name): Stephanie Hamby | | Telephone #: 864-640-5274 | |
| Email Address: shamby@apex-ehs.com | | Fax #: | Purchase Order: |
| Project Name/Number: COS 147 Princeton St | | Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email <input type="checkbox"/> Mail | |
| U.S. State Samples Taken: SC | | CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt | |

Turnaround Time (TAT) Options* - Please Check

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

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

| PLM - Bulk (reporting limit) | TEM - Bulk |
|---|--|
| <input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (<1%) | <input checked="" type="checkbox"/> TEM EPA NOB - EPA 600/R-93/116 Section 2.5.5.1 |
| <input type="checkbox"/> PLM EPA NOB (<1%) | <input type="checkbox"/> NY ELAP Method 198.4 (TEM) |
| Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) | <input type="checkbox"/> Chatfield Protocol (semi-quantitative) |
| Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) | <input type="checkbox"/> TEM % by Mass - EPA 600/R-93/116 Section 2.5.5.2 |
| <input type="checkbox"/> NIOSH 9002 (<1%) | <input type="checkbox"/> TEM Qualitative via Filtration Prep Technique |
| <input type="checkbox"/> NY ELAP Method 198.1 (friable in NY) | <input type="checkbox"/> TEM Qualitative via Drop Mount Prep Technique |
| <input type="checkbox"/> NY ELAP Method 198.6 NOB (non-friable-NY) | Other |
| <input type="checkbox"/> OSHA ID-191 Modified | <input type="checkbox"/> |
| <input type="checkbox"/> Standard Addition Method | |

Check For Positive Stop - Clearly Identify Homogenous Group Date Sampled: 1-8-2020

Samplers Name: T. Shultz Samplers Signature: _____

| Sample # | HA # | Sample Location | Material Description |
|----------|------|-----------------|----------------------|
| 1 | | Roof | 1 Shingle, 3 felt |
| 2 | | | |
| 3 | | | |
| 4 | | Windows | Caulk |
| 5 | | | |
| 6 | | | |
| 7 | | windows | glazing |
| 8 | | | |
| 9 | | | |
| 10 | | exterior siding | black felt |

| | | | |
|--------------------------------|--------------------|---------------------|----------------|
| Client Sample # (s): | - | Total # of Samples: | 23 |
| Relinquished (Client): | <i>[Signature]</i> | Date: | 1/16/2020 |
| Received (Lab): | <i>[Signature]</i> | Date: | 1/17/20 |
| Comments/Special Instructions: | | Time: | 2:58 PM |
| | | Time: | 8:45 AM FX |
| | | | 7958 1586 4462 |



EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

412 000540

Pineville, NC 28134
PHONE: (704) 525-2205
FAX: (704) 525-2382

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

| Sample # | HA # | Sample Location | Material Description |
|---------------------------------|------|-----------------|------------------------|
| 11 | | exterior siding | black felt |
| 12 | | ┆ | ┆ |
| 13 | | Kitchen | 12x12 grey self stick |
| 14 | | ┆ | floor tile ┆ |
| 15 | | ┆ | ┆ |
| 16 | | 1/2 bath | tan 12x12 self stick |
| 17 | | ┆ | ┆ |
| 18 | | ┆ | ┆ |
| 19 | | ceiling & walls | Plaster w/ finish over |
| 20 | | throughout | unfinished drywall |
| 21 | | ┆ | ┆ |
| 22 | | ┆ | ┆ |
| 23 | | ┆ | ┆ |
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| | | | |
| *Comments/Special Instructions: | | | |

SECTION IV
Photographic Log



Photo 1 – 147 Princeton Street in Spartanburg, South Carolina.



Photo 2 – Black felt under non-suspect exterior siding.



Photo 3 – Exterior window glazing.



Photo 4 – Exterior window caulk.



Photo 5 – Wood flooring.

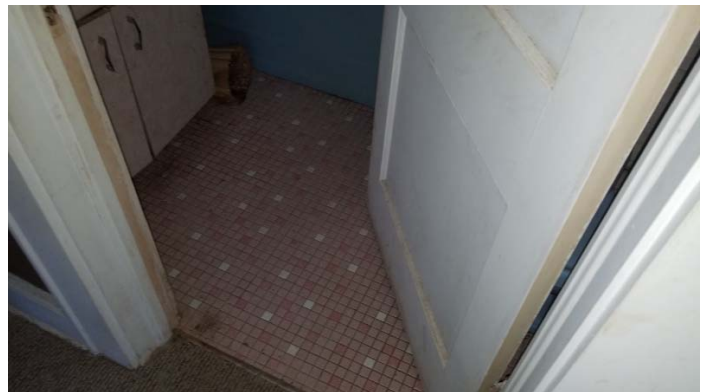


Photo 6 – Bathroom ceramic tile flooring.

*Asbestos Containing Materials Assessment
147 Princeton Street
Spartanburg, South Carolina 29306*



Photo 7 – Kitchen self-stick floor tile.

SECTION V

SC DHEC Asbestos Inspector License

SCDHEC ISSUED
Asbestos ID Card

Tedman K Shultz



CONSULTBI BI-00971
AIRSAMPLER AS-00355

Expiration Date:
01/16/20
03/06/20

**North Carolina
Asbestos Accreditation**



Tedman K Shultz
7 Winchester Court
Mauldin, SC 29662

123985

| EXPIRATION | | | |
|-------------|-----|-------|-------|
| 03-31-2020 | | | |
| DOB | SEX | HT | WT |
| 03-10-1972 | M | 5'10" | 240 |
| CLASS | | # | EXP |
| AIR MONITOR | | 80864 | 03-20 |
| INSPECTOR | | 12900 | 01-20 |