PRE-DEMOLITION
ASBESTOS INSPECTION REPORT

F&R PROJECT NUMBER: 65U-0005

Regarding:

City Maintenance Garage
177 West Broad Street
Spartanburg, South Carolina

Prepared for:

Mr. David Cook
City of Spartanburg
145 W. Broad Street
Spartanburg, SC 29306

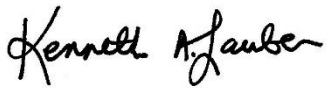
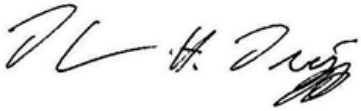
Prepared by:

Froehling & Robertson Inc.
18 Woods Lake Road
Greenville, South Carolina 29607
(864) 271-2840

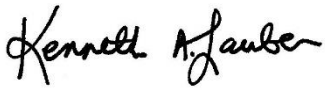
Date of Inspection: April 7, 2016

Date of Report: April 21, 2016

SIGNATURE PAGE

INSPECTOR(S) NAME(S)	SIGNATURE	SC LICENSE No.	EXP. DATE
Kenneth A. Lauber		BI-00618	12/07/2016
Thomas Tripp		BI-00814	04/05/2017

REPORT PREPARED BY:



Kenneth A. Lauber, P.G.
Environmental Group Manager

REVIEWED BY:

Jesse Phillips
Senior Environmental Professional

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1.0 EXECUTIVE SUMMARY

1.1 Asbestos and Inspection

Froehling & Robertson (F&R) conducted a pre-demolition asbestos inspection for the City of Spartanburg, (the **Client**) at (City Maintenance Garage) 177 West Broad Street in Spartanburg, South Carolina on April 7, 2016. The purpose of the inspection was to sample suspect building materials for asbestos content prior to Demolition of the structure. A limited evaluation of lead in paint was also conducted at the request of the **Client**.

Kenneth A. Lauber and Thomas Tripp, who hold South Carolina Asbestos Inspector License Numbers BI-00618 and BI-00814, respectively, conducted the inspection activities at the project site on April 7, 2016.

Samples were shipped via overnight delivery under Chain of Custody to EMSL Analytical, Inc. (EMSL) in Charlotte, North Carolina (PLM & TEM) for analysis. EMSL is accredited by the American Industrial Hygiene Association under their NVLAP quality control program for bulk asbestos analysis (Certificate 200841-0).

1.2 Report Preparation

This report was prepared by Kenneth Lauber to detail the findings of the inspection after analyses of the bulk asbestos and paint chip samples were conducted by EMSL.

1.3 Building Description

Based on information provided by the **Client**, the subject site is located at 177 West Broad Street. It consists of a one-story commercial structure with approximately 12,500 total square feet of interior space. The construction date of the building is reported to be circa 1921. Based on Client information, and the F&R site reconnaissance of the structure, the building consisted of steel frame structure built on a slab on grade foundation with a flat built up roof (BUR) and a cement stucco and concrete block exterior. The Interior finishes consisted primarily of wood paneling, painted drywall and ceiling tile. Flooring was concrete.

1.4 Suspect Asbestos Containing Building Material Description

Suspect asbestos containing materials in the area of proposed demolition at the property included drywall and joint compound, ceiling tile, cove base, roof flashing, cement tile, roof shingles, felt paper, built-up roofing and plaster wall (interior and exterior).

Suspect ACM	Location	Approximate SF	Friable/Non-Friable	Condition	Number of samples
Drywall/Joint compound	Offices	3,000 SF	F	Good	5
Cove base	Offices	500 LF	NF	Good	3
Plaster Wall	Interior of garage	1,000 SF	F	Good	3
Ceiling Tile	Offices	1,000 SF	F	Good	3
Cement Siding	Roof Vent	500 SF	F	Good	3
Roof Flashing	Roof Parapet	3000 SF	NF	Good	3
Built Up Roof	Roof Field	10,000 SF	NF	Good	3
Roof Decking	Base of BUR	10,000 SF	NF	Good	3
Plaster Wall	Exterior	1,000 SF	F	Good	3

2.0 GENERAL BACKGROUND INFORMATION

2.1 Asbestos Background & Regulatory Information

The term “asbestos” refers to a group of naturally-occurring, fibrous minerals that are commercially mined throughout the world, primarily in Canada, Russia, and South Africa. Asbestos has been used in hundreds of products. Collectively, these products are referred to as asbestos-containing materials (ACMs). Asbestos gained wide use because it is plentiful, readily available, low in cost, and because of its unique properties - it does not burn, is strong, conducts heat and electricity poorly, and is resistant to chemical corrosion. As an insulator, asbestos received wide spread use for thermal insulation and condensation control. Asbestos is added to a variety of building materials to enhance strength. It is found in concrete and concrete-like products. Asbestos cement products are used as siding and roofing shingles, wallboard, as corrugated or flat sheets for roofing and partition walls, and as piping. Asbestos has also been added to asphalt, vinyl, and other materials to make products like roofing cements, felts and shingles, exterior siding materials, floor tiles, joint compounds, and mastics/adhesives. Asbestos also proved valuable as a component of acoustical plaster. This material was troweled on or

sprayed onto ceilings or walls. As a decorative product, frequently referred to as textured ceiling or wall paint, asbestos was also mixed with other materials and sprayed on to walls and ceilings to produce a soft textured appearance. Asbestos is still mined commercially and used in many common products, including brake shoes, roofing materials, and flooring products. It is important to realize that commercially available products containing asbestos can still be purchased. It is a common misconception that asbestos is no longer used.

The three most commonly encountered types of asbestos are sometimes referred to by their predominant color: Chrysotile (white) is by far the most frequently used asbestos mineral, constituting approximately 95% of all commercial and industrial applications. Chrysotile fibers are long and flexible and can be spun or woven into cloth. Amosite (brown) and Crocidolite (blue) are used in approximately 4-5% of asbestos-containing products. Both types generally consist of shorter, more rigid fiber bundles that are highly resistant to heat, electricity, and chemicals. Three other types of asbestos – anthophyllite, tremolite, and actinolite – are only rarely used for commercial purposes, but they occasionally occur in small quantities (naturally) along with other raw materials.

The U.S. Environmental Protection Agency promulgated the National Emission Standards for Hazardous Air Pollutants (NESHAP) [40 CFR Part 61], which addresses the application, removal, and disposal of asbestos-containing materials (ACM). Under NESHAP the following categories are defined for asbestos-containing materials:

Friable - When dry, can be crumbled, pulverized, or reduced to powder by hand pressure.

Nonfriable - When dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Category I Nonfriable ACM - Packings, gaskets, resilient floor coverings, and asphalt roofing products containing more than 1% asbestos.

Category II Nonfriable ACM – Any material, excluding Category I Nonfriable ACM, containing more than 1% asbestos.

Regulated Asbestos Containing Material (RACM) – One of the following:

1. Friable ACM
2. Category I Nonfriable ACM that has become friable.
3. Category I Nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading.
4. Category II Nonfriable ACM that has a high probability of becoming, or has become, friable by the forces expected to act on the material in the course of demolition or renovation operations.

Under NESHAP, the following actions are required:

1. Prior to the commencement of demolition or renovation activities, the building owner must have the affected facility or part of the facility where the demolition or renovation activities will occur inspected for the presence of asbestos by a state licensed asbestos inspector.

2. A state licensed asbestos abatement contractor must then remove all RACM from the facility, before any demolition or renovation activity begins, that would break up, dislodge, or similarly disturb the material or preclude access for subsequent removal.

3. RACM need not be removed if:

    a) It is Category I nonfriable ACM that is not in damaged or significantly damaged condition.
    b) It is on a facility component that is encased in concrete or other similar material and is adequately wet whenever exposed.
    c) It was not accessible for testing and was therefore not discovered until after demolition began and because of the demolition the material cannot be safely removed.
    d) It is Category II nonfriable ACM and the probability is low that the material will become crumbled, pulverized, or reduced to powder during demolition.

The Occupational Safety and Health Administration (OSHA) has established three sets of regulatory standards pertaining to asbestos exposure:

29 CFR 1910.1001	General Industry
29 CFR 1926.1101	Construction Industry
29 CFR 1910.134	Respiratory Protection

(note – CFR stands for Code of Federal Regulations)

The construction industry standard covers activities involving asbestos demolition, removal, alteration, repair, maintenance, installation, cleanup, transportation, disposal, and storage. The general industry standard covers other activities where asbestos exposure is possible.

Addressed under the OSHA standards are building owner/employer responsibilities regarding the identification of identified or presumed asbestos containing materials (PACM), notification to tenants/employees of the presence of asbestos, employee training, and work procedures.

3.0 PROCEDURES

3.1 Asbestos Sample Collection

F&R personnel collected a total of thirty-six (36) bulk samples of suspect asbestos containing materials (ACM) from the structure as shown in the attached photo log and sample location map (Appendix I).

At least three (3) samples of each suspect material were collected and analyzed using a positive stop protocol. If one of the three samples tested positive, then the remaining samples were not analyzed.

Due to layering of materials, fifty-six (56) analyses were conducted using Polarized Light Microscopy (PLM) by EPA Method 600/R-93/116 by the laboratory and in accordance with South Carolina DHEC regulations.

Six (6) samples of non-friable organically bound (NOB) materials were designated for analysis by Transmission Electron Microscopy (TEM) according to method EPA/600/R-93/116 Section 2.5.5.1 in accordance with South Carolina DHEC regulations. NOB materials must be analyzed via TEM when found to contain no asbestos by the PLM analysis method. Due to layering in the materials, eight (8) NOB samples were analyzed by TEM.

A site figure showing the location of the positive samples is attached in Appendix I. Analytical results and chain of custody documents from the PLM and TEM analysis are found in Appendix II.

3.2 Lead Paint Chip Sample Collection

F&R personnel collected a total of three (3) paint chip samples from the structure. The samples were collected from the interior walls of the garage area and analyzed by Flame Atomic Absorption Spectrometry (AAS) by EPA method SW 846 3050B/7000B.

4.0 FINDINGS AND RECOMMENDATIONS

4.1 Asbestos Containing Materials

Two of the fifty-six (56) PLM analyses from the samples collected during the inspection were determined to contain asbestos.

The positive samples represented the cementitious siding on the roof vents and roof flashing on the roof parapet walls. None of the eight (8) samples of non-friable organically bound (NOB) materials analyzed by Transmission Electron Microscopy (TEM) were determined to contain asbestos greater than 1%.

4.2 Lead in Paint

One (1) of the paint chip samples, the tan color painted interior wall in the garage, was found to contain more than 0.5% lead by weight, which is a regulated material under a variety of federal laws and is identified as "lead-based paint". However, none of the other paint chip samples were found to contain lead at levels above the Consumer Products Safety Standard for lead in paint (0.06%).

The analytical results and chain of custody form for the LBP analysis is found in Appendix II.

5.0 LIMITATIONS

This report has been prepared for the exclusive use of the City of Spartanburg. This report has been prepared in accordance with generally accepted environmental practices. No other warranty, expressed or implied, is made. Our observations are based upon conditions readily visible at the time of our site visit. We have not verified the completeness or accuracy of the information provided by others.

During the site visit, accessible areas within the proposed demolition areas were visually surveyed for the presence of suspect asbestos containing materials (ACM). Inaccessible areas were not surveyed; therefore, some areas of ACM may not have been identified. Areas inspected were those designated by the scope of services. As with any similar survey of this nature, actual conditions exist only at the precise locations from which bulk samples were collected. Certain inferences are based on the results of this sampling and related testing to form a professional opinion of conditions in areas beyond those from which the samples were collected. No other warranty, expressed or implied, is made.

F&R, by virtue of providing the services described in this report, does not assume the responsibility of the person(s) in charge of the site, or otherwise undertake responsibility for reporting to any local, state, or federal public agencies nay conditions at the site that may present a potential danger to public health, safety, or the environment. It is the client's responsibility to notify the appropriate local, state, or federal public agencies as required by law, or otherwise to disclose, in a timely manner, any information that may be necessary to prevent any danger to public health, safety, or the environment. The contents of this report should not be construed in any way as a recommendation to purchase, sell, or further develop the project site.

APPENDIX I

PHOTO LOG
AND
SAMPLE LOCATION MAPS

1. View of the front of the building.

2. View of rear of building.

3. View of exterior plaster wall.

4. View of cement tiles on roof vent.

5. View of felt paper under cement tiles on roof vent.

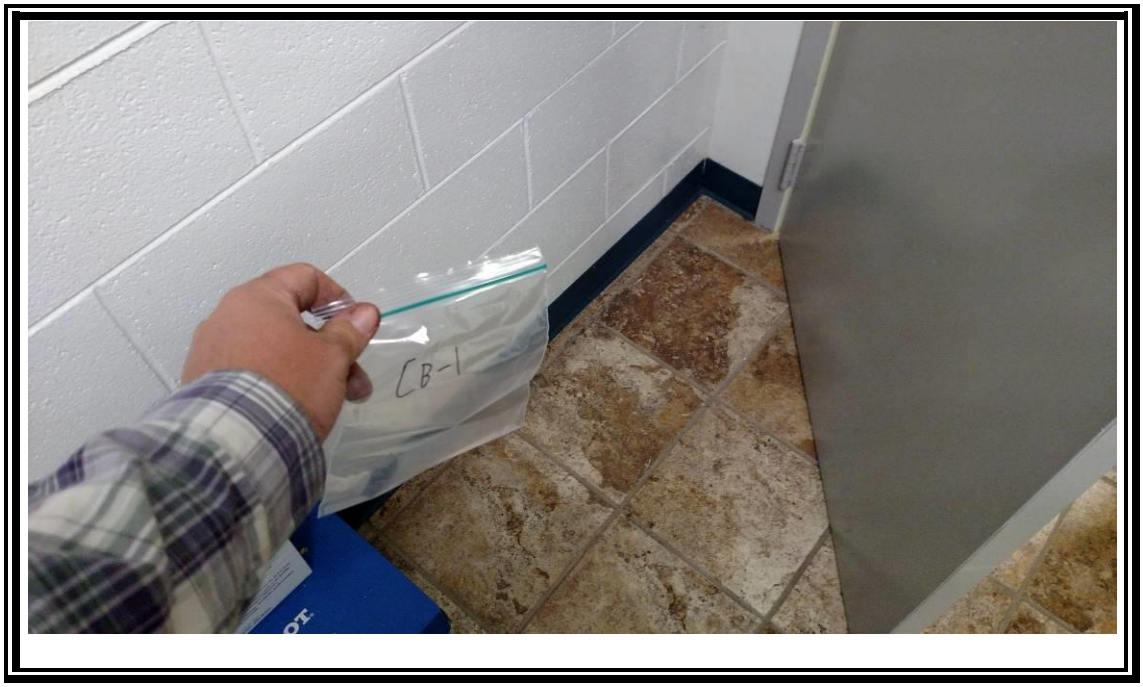
6. View of roofing shingles and felt paper on roof vent.

7. View of roof flashing.

8. View of built up roofing.

9. View of roof decking.

10. View of drywall and joint compound in the office area.



11. View of cove base in the office area.

12. View of ceiling tile in the office area.

13. View of interior gray paint.

14. View of plaster wall and Interior tan paint.

15. View of interior green paint.

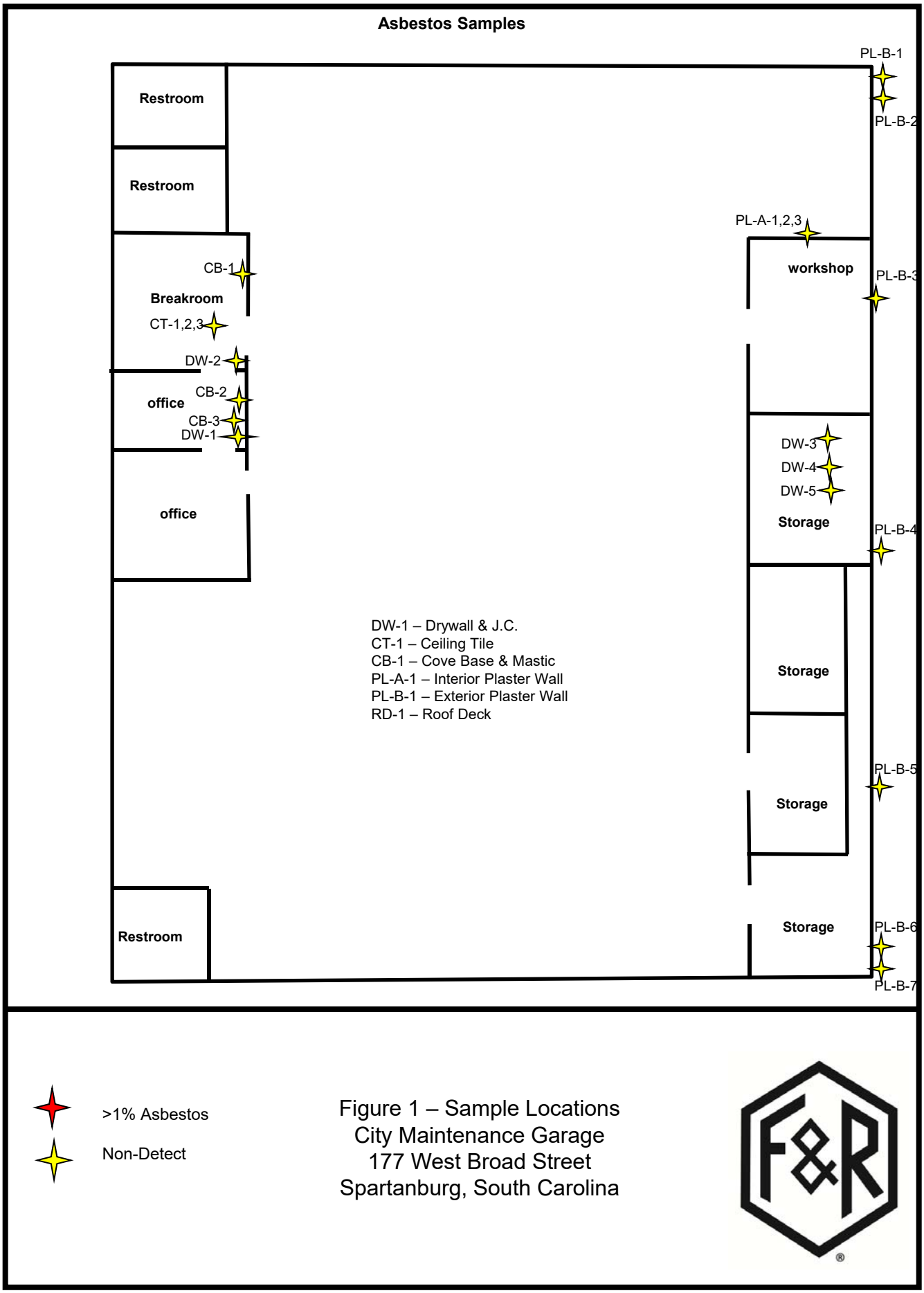
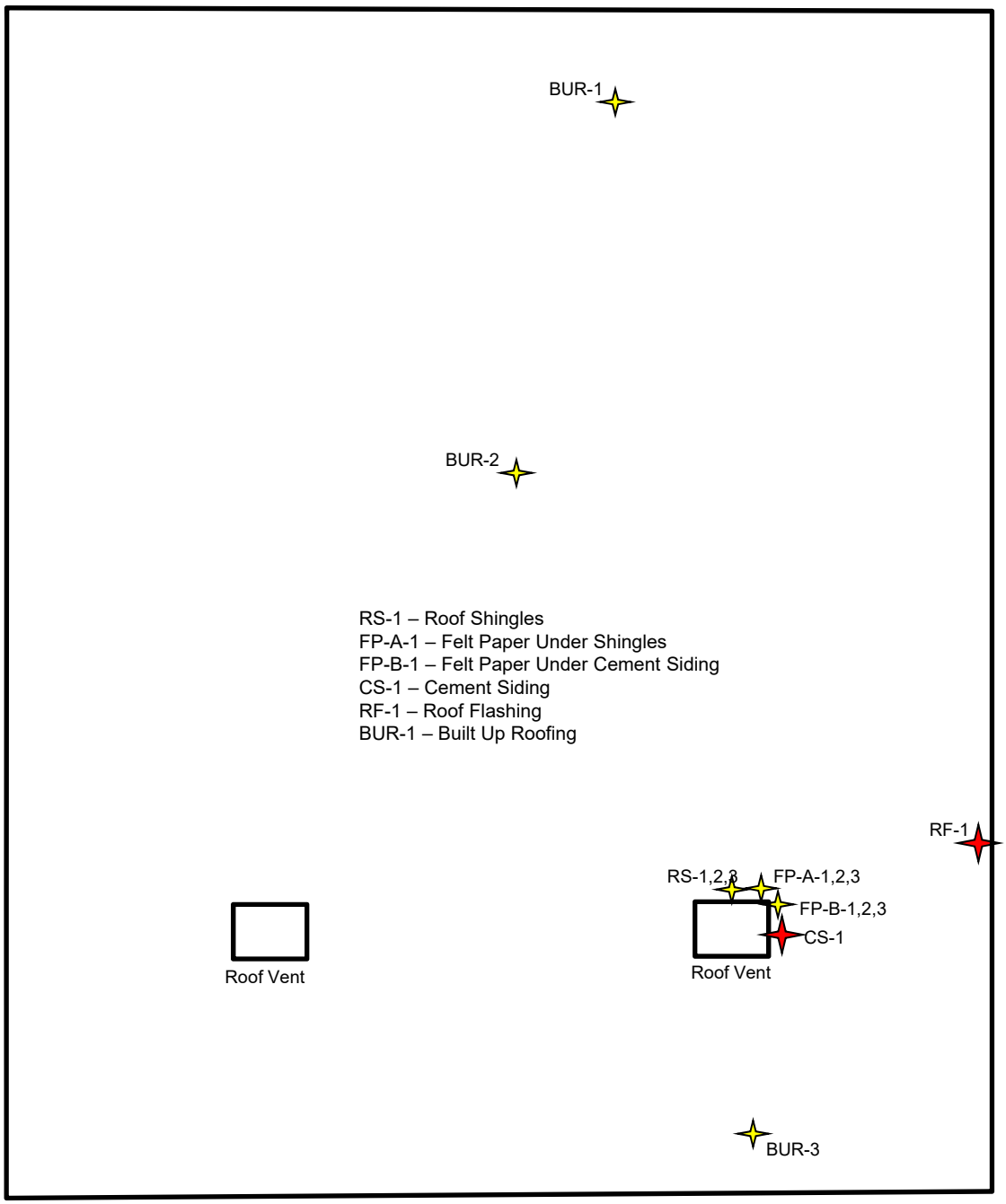


Figure 1 – Sample Locations
City Maintenance Garage
177 West Broad Street
Spartanburg, South Carolina

Roof Level – Asbestos Samples



>1% Asbestos

Non-Detect

Figure 2 – Sample Locations
City Maintenance Garage
177 West Broad Street
Spartanburg, South Carolina

APPENDIX II

ASBESTOS ANALYTICAL RESULTS
& CHAIN OF CUSTODY DOCUMENTS

EMSL Analytical, Inc.
376 Crompton Street Charlotte, NC 28273
Tel/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com / charlottelab@emsl.com

EMSL Order: 411603036
Customer ID: FROE22
Customer PO: 65U0005
Project ID:

Attention: Thomas Tripp
Froehling & Robertson
18 Woods Lake Road
Greenville, SC 29607

Project: 177 West Broad Street

Phone: (864) 271-2840
Fax: (864) 271-8124
Received Date: 04/08/2016 10:30 AM
Analysis Date: 04/13/2016
Collected Date: 04/06/2016

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
RS-1 *411603036-0001*	Roof/ Vent - Roof Shingles	Black Fibrous Heterogeneous	30% Cellulose	8% Quartz 62% Non-fibrous (Other)	None Detected
RS-2 *411603036-0002*	Roof/ Vent - Roof Shingles	Gray/Black Fibrous Homogeneous	20% Cellulose	8% Quartz 72% Non-fibrous (Other)	None Detected
FP-A-1 *411603036-0003*	Felt Paper under Shingles - Felt Paper	White/Black Non-Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
FP-A-2 *411603036-0004*	Felt Paper under Shingles - Felt Paper	Black Fibrous Homogeneous	65% Cellulose	35% Non-fibrous (Other)	None Detected
FP-B-1 *411603036-0005*	Felt Paper under Cement Siding - Felt Paper	Black Non-Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
FP-B-2 *411603036-0006*	Felt Paper under Cement Siding - Felt Paper	Black Fibrous Homogeneous	65% Cellulose	35% Non-fibrous (Other)	None Detected
CS-1 *411603036-0007*	Roof Vent - Cement Siding	Gray/White Fibrous Homogeneous		20% Ca Carbonate 72% Non-fibrous (Other)	8% Chrysotile
CS-2 *411603036-0008*	Roof Vent - Cement Siding				Positive Stop (Not Analyzed)
CS-3 *411603036-0009*	Roof Vent - Cement Siding				Positive Stop (Not Analyzed)
RF-1-Tar *411603036-0010*	Roof - Roof Flashing	Black Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
RF-1-Fibrous Layer *411603036-0010A*	Roof - Roof Flashing	Black Fibrous Homogeneous	15% Cellulose 5% Glass	65% Non-fibrous (Other)	15% Chrysotile
RF-2-Tar *411603036-0011*	Roof - Roof Flashing	Black Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
RF-2-Fibrous Layer *411603036-0011A*	Roof - Roof Flashing				Positive Stop (Not Analyzed)
BUR-1-Tar w/Rocks *411603036-0012*	Roof - Built-Up Roofing	Black Fibrous Heterogeneous	3% Cellulose	10% Quartz 5% Ca Carbonate 82% Non-fibrous (Other)	None Detected
BUR-1-Cellulose Layer *411603036-0012A*	Roof - Built-Up Roofing	Black Non-Fibrous Homogeneous	40% Cellulose	60% Non-fibrous (Other)	None Detected
BUR-2-Tar w/Rocks *411603036-0013*	Roof - Built-Up Roofing	Black Non-Fibrous Homogeneous	<1% Cellulose	8% Quartz 5% Ca Carbonate 87% Non-fibrous (Other)	None Detected

Initial Report From: 04/14/2016 11:20:57

EMSL Analytical, Inc.
376 Crompton Street Charlotte, NC 28273
Tel/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com / charlottelab@emsl.com

EMSL Order: 411603036
Customer ID: FROE22
Customer PO: 65U0005
Project ID:

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
BUR-2-Cellulose Layer *411603036-0013A*	Roof - Built-Up Roofing	Black Fibrous Homogeneous	30% Cellulose	70% Non-fibrous (Other)	None Detected
RD-1 *411603036-0014*	Roof Deck - Roof Decking	Gray Non-Fibrous Homogeneous	3% Cellulose	5% Ca Carbonate 92% Non-fibrous (Other)	None Detected
RD-2 *411603036-0015*	Roof Deck - Roof Decking	Gray Non-Fibrous Homogeneous	5% Cellulose	5% Ca Carbonate 90% Non-fibrous (Other)	None Detected
RD-3 *411603036-0016*	Roof Deck - Roof Decking	Gray Non-Fibrous Homogeneous	2% Cellulose	5% Ca Carbonate 93% Non-fibrous (Other)	None Detected
CT-1 *411603036-0017*	Offices - 2x4 Ceiling Tile	Gray/White Fibrous Heterogeneous	50% Cellulose 10% Min. Wool	15% Perlite 25% Non-fibrous (Other)	None Detected
CT-2 *411603036-0018*	Offices - 2x4 Ceiling Tile	Gray/White Fibrous Heterogeneous	55% Cellulose 10% Min. Wool	15% Perlite 20% Non-fibrous (Other)	None Detected
CT-3 *411603036-0019*	Offices - 2x4 Ceiling Tile	Gray/White Fibrous Homogeneous	65% Cellulose 8% Min. Wool	15% Perlite 12% Non-fibrous (Other)	None Detected
CB-1-Cove Base *411603036-0020*	Offices - 4" Blue Cove Base w/ Mastic	Blue Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
CB-1-Mastic *411603036-0020A*	Offices - 4" Blue Cove Base w/ Mastic	Tan Non-Fibrous Homogeneous	<1% Cellulose	5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
CB-2-Cove Base *411603036-0021*	Offices - 4" Blue Cove Base w/ Mastic	Blue Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
CB-2-Mastic *411603036-0021A*	Offices - 4" Blue Cove Base w/ Mastic	Beige Non-Fibrous Homogeneous		8% Ca Carbonate 92% Non-fibrous (Other)	None Detected
DW-1-Drywall *411603036-0022* *No joint compound present*	Offices/ Upstairs Storage - Drywall & Joint Compound	Gray Non-Fibrous Homogeneous	10% Cellulose 1% Glass	89% Non-fibrous (Other)	None Detected
DW-2-Drywall *411603036-0023*	Offices/ Upstairs Storage - Drywall & Joint Compound	Gray Fibrous Heterogeneous	10% Cellulose 1% Glass	89% Non-fibrous (Other)	None Detected
DW-2-Joint Compound *411603036-0023A*	Offices/ Upstairs Storage - Drywall & Joint Compound	White Non-Fibrous Homogeneous		40% Ca Carbonate 60% Non-fibrous (Other)	None Detected
DW-2-Tape *411603036-0023B*	Offices/ Upstairs Storage - Drywall & Joint Compound	Tan Fibrous Homogeneous	100% Cellulose		None Detected
DW-3-Drywall *411603036-0024*	Offices/ Upstairs Storage - Drywall & Joint Compound	Gray Fibrous Heterogeneous	10% Cellulose 1% Glass	89% Non-fibrous (Other)	None Detected
DW-3-Joint Compound *411603036-0024A*	Offices/ Upstairs Storage - Drywall & Joint Compound	White Non-Fibrous Homogeneous		40% Ca Carbonate 60% Non-fibrous (Other)	None Detected
DW-3-Tape *411603036-0024B*	Offices/ Upstairs Storage - Drywall & Joint Compound	Tan Fibrous Homogeneous	100% Cellulose		None Detected

Initial Report From: 04/14/2016 11:20:57

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EMSL Order: 411603036
Customer ID: FROE22
Customer PO: 65U0005
Project ID:

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
DW-4-Drywall *411603036-0025*	Offices/ Upstairs Storage - Drywall & Joint Compound	Brown/Gray Fibrous Homogeneous	10% Cellulose 2% Glass	88% Non-fibrous (Other)	None Detected
DW-4-Joint Compound *411603036-0025A*	Offices/ Upstairs Storage - Drywall & Joint Compound	White Non-Fibrous Homogeneous		30% Ca Carbonate 70% Non-fibrous (Other)	None Detected
DW-5-Drywall *411603036-0026*	Offices/ Upstairs Storage - Drywall & Joint Compound	Brown/Gray Fibrous Homogeneous	10% Cellulose 1% Glass	89% Non-fibrous (Other)	None Detected
DW-5-Joint Compound *411603036-0026A*	Offices/ Upstairs Storage - Drywall & Joint Compound	White Non-Fibrous Homogeneous		30% Ca Carbonate 70% Non-fibrous (Other)	None Detected
DW-5-Tape *411603036-0026B*	Offices/ Upstairs Storage - Drywall & Joint Compound	Tan Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
PL-A-1-Skim Coat *411603036-0027*	Plaster Wall Interior - Plaster Wall	White Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
PL-A-1-Rough Coat *411603036-0027A*	Plaster Wall Interior - Plaster Wall	Gray Non-Fibrous Homogeneous		20% Quartz 5% Ca Carbonate 75% Non-fibrous (Other)	None Detected
PL-A-2-Skim Coat *411603036-0028*	Plaster Wall Interior - Plaster Wall	White Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
PL-A-2-Rough Coat *411603036-0028A*	Plaster Wall Interior - Plaster Wall	Gray Non-Fibrous Homogeneous		30% Quartz 5% Ca Carbonate 65% Non-fibrous (Other)	None Detected
PL-A-3-Skim Coat *411603036-0029*	Plaster Wall Interior - Plaster Wall	White Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
PL-A-3-Rough Coat *411603036-0029A*	Plaster Wall Interior - Plaster Wall	Gray Non-Fibrous Homogeneous		20% Quartz 5% Ca Carbonate 75% Non-fibrous (Other)	None Detected
PL-B-1-Skim Coat *411603036-0030*	Plaster Wall Exterior - Plaster Wall	White Non-Fibrous Homogeneous		20% Quartz 5% Ca Carbonate 75% Non-fibrous (Other)	None Detected
PL-B-1-Rough Coat *411603036-0030A*	Plaster Wall Exterior - Plaster Wall	Gray Non-Fibrous Homogeneous		30% Quartz 5% Ca Carbonate 65% Non-fibrous (Other)	None Detected
PL-B-2-Skim Coat *411603036-0031*	Plaster Wall Exterior - Plaster Wall	White Non-Fibrous Homogeneous		30% Quartz 5% Ca Carbonate 65% Non-fibrous (Other)	None Detected
PL-B-2-Rough Coat *411603036-0031A*	Plaster Wall Exterior - Plaster Wall	Gray Non-Fibrous Homogeneous	<1% Cellulose	30% Quartz 5% Ca Carbonate 65% Non-fibrous (Other)	None Detected
PL-B-3-Skim Coat *411603036-0032*	Plaster Wall Exterior - Plaster Wall	White Non-Fibrous Homogeneous		25% Quartz 5% Ca Carbonate 70% Non-fibrous (Other)	None Detected
PL-B-3-Rough Coat *411603036-0032A*	Plaster Wall Exterior - Plaster Wall	Gray Non-Fibrous Homogeneous		25% Quartz 5% Ca Carbonate 70% Non-fibrous (Other)	None Detected
PL-B-4-Skim Coat *411603036-0033*	Plaster Wall Exterior - Plaster Wall	White Non-Fibrous Homogeneous		25% Quartz 5% Ca Carbonate 70% Non-fibrous (Other)	None Detected
PL-B-4-Rough Coat *411603036-0033A*	Plaster Wall Exterior - Plaster Wall	Gray Non-Fibrous Homogeneous		30% Quartz 5% Ca Carbonate 65% Non-fibrous (Other)	None Detected

Initial Report From: 04/14/2016 11:20:57

EMSL Analytical, Inc.
376 Crompton Street Charlotte, NC 28273
Tel/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com / charlottelab@emsl.com

EMSL Order: 411603036
Customer ID: FROE22
Customer PO: 65U0005
Project ID:

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
PL-B-5-Skim Coat *411603036-0034*	Plaster Wall Exterior - Plaster Wall	White Non-Fibrous Homogeneous		10% Quartz 5% Ca Carbonate 85% Non-fibrous (Other)	None Detected
PL-B-5-Rough Coat *411603036-0034A*	Plaster Wall Exterior - Plaster Wall	Gray Non-Fibrous Homogeneous	<1% Cellulose	30% Quartz 5% Ca Carbonate 65% Non-fibrous (Other)	None Detected
PL-B-6-Skim Coat *411603036-0035*	Plaster Wall Exterior - Plaster Wall	White Non-Fibrous Homogeneous		15% Quartz 5% Ca Carbonate 80% Non-fibrous (Other)	None Detected
PL-B-6-Rough Coat *411603036-0035A*	Plaster Wall Exterior - Plaster Wall	Gray Non-Fibrous Homogeneous	<1% Cellulose	30% Quartz 5% Ca Carbonate 65% Non-fibrous (Other)	None Detected
PL-B-7-Skim Coat *411603036-0036*	Plaster Wall Exterior - Plaster Wall	White Non-Fibrous Homogeneous		15% Quartz 5% Ca Carbonate 80% Non-fibrous (Other)	None Detected
PL-B-7-Rough Coat *411603036-0036A*	Plaster Wall Exterior - Plaster Wall	Gray Non-Fibrous Homogeneous		30% Quartz 5% Ca Carbonate 65% Non-fibrous (Other)	None Detected

Analyst(s)
Erin Guzowski (23)
Eric Loomis (33)

Lee Plumley, Laboratory Manager
or Other Approved Signatory

Initial Report From: 04/14/2016 11:20:57

EMSL Analytical, Inc.
376 Crompton Street, Charlotte, NC 28273
Phone/Fax: (704) 525-2205 / (704) 525-2382
http://www.EMSL.com charlottelab@emsl.com

EMSL Order:	411603036
CustomerID:	FROE22
CustomerPO:	65U0005
ProjectID:	

Attn: **Thomas Tripp**
Froehling & Robertson
18 Woods Lake Road
Greenville, SC 29607

Phone:	(864) 271-2840
Fax:	(864) 271-8124
Received:	04/14/16 12:40 PM
Analysis Date:	4/15/2016
Collected:	4/6/2016

Project: **177 West Broad Street**

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
RS-3 *411603036-0037*	Roof/ Vent - Roof Shingles	Black Non-Fibrous Heterogeneous	99.6	0.36 Fibrous (other)	No Asbestos Detected
FP-A-3 *411603036-0038*	Felt Paper under Shingles - Felt Paper	Black Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
FP-B-3 *411603036-0039*	Felt Paper under Cement Siding - Felt Paper	Black Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
RF-3-Tar *411603036-0040*	Roof - Roof Flashing	Black Non-Fibrous Heterogeneous	99.4	None	0.63% Chrysotile
BUR-3-Tar w/Rocks *411603036-0041*	Roof - Built-Up Roofing	Black Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
BUR-3-Cellulose Layer *411603036-0042*	Roof - Built-Up Roofing	Black Non-Fibrous Heterogeneous	99.4	0.65 Fibrous (other)	No Asbestos Detected
CB-3-Cove Base *411603036-0043*	Offices - 4" Blue Cove Base w/ Mastic	Blue Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
CB-3-Mastic *411603036-0044*	Offices - 4" Blue Cove Base w/ Mastic	Beige Non-Fibrous Heterogeneous	100	None	No Asbestos Detected

Analyst(s)

Aaron Hartley (8)

Lee Plumley, Laboratory Manager
or other approved signatory

Initial report from 04/15/2016 13:26:54

OrderID: 411603036

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (*Lab Use Only*): 411603036

EMSL Analytical, Inc.
376 Crompton Street
Charlotte, NC 28273
PHONE: (704) 525-2205
FAX: (704) 525 2382

Company : Froehling & Robertson, Inc.	**EMSL-Bill to:** ☑ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 18 Woods Lake Road	
City: Greenville **State/Province:** SC	**Zip/Postal Code:** 29607 **Country:** United States
Report To (Name): Thomas Tripp	**Telephone #:** 864-271-2840
Email Address: ttripp@fandr.com	**Fax #:** **Purchase Order:** 65U0005
Project Name/Number: 177 West Broad Street	**Please Provide Results:** ☐ Fax ☑ Email ☐ Mail
U.S. State Samples Taken: SC	**CT Samples:** ☐ Commercial/Taxable ☐ 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
■ PLM EPA 600/R-93/116 (<1%)	■ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
☐ PLM EPA NOB (<1%)	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

■ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** 4-6-16

Samplers Name: Thomas Tripp **Samplers Signature:** [signature]

Sample #	HA #	Sample Location	Material Description
RS-1	1	~~Roof Shingles~~ Roof/Veat	Roof Shingles
RS-2	1	"	"
TEM – RS-3	1	"	"
FP-A-1	2	Felt Paper under Shingles	Felt Paper
FP-A-2	2	"	"
TEM – FP-A-3	2	"	"
FP-B-1	3	Felt Paper under cement siding	Felt paper
FP-B-2	3	"	"
FP-B-3	3	"	"

Client Sample # (s): - **Total # of Samples:** 42

Relinquished (Client): [signature] **Date:** 4-7-16 **Time:** 12:00

Received (Lab): Kyle Nixon **Date:** 4/8/16 **Time:** 10:30 AM EMSL FX

Comments/Special Instructions: 7950 9562 2092

Page 1 of 3 pages

OrderID: 411603036

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (*Lab Use Only*): 411603036

EMSL Analytical, Inc.
376 Crompton Street
Charlotte, NC 28273
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
CS-1	4	Roof vent	Cement siding
CS-2	4	"	"
TEM- CS-3	4	"	"
RF-1	5	Roof	Roof Flashing
RF-2	5	"	"
TEM- RF-3	5	"	"
BuR-1	6	Roof	Built-up Roofing
BuR-2	6	"	"
TEM- BuR-3	6	"	"
RD-1	7	Roof Deck	Roof Decking
RD-2	7	"	"
RD-3	7	"	"
CT-1	8	Offices	2X4 Ceiling tile
CT-2	8	"	"
CT-3	8	"	"
CB-1	9	Offices	4" Blue Cove Base w/mastic
CB-2	9	"	"
TEM- CB-3	9	"	"
DW-1	10	offices/upstairs storage	Drywall & Joint Compound
DW-2	10	"	"
DW-3	10	"	"
DW-4	10	"	"
DW-5	10	"	"

*Comments/Special Instructions:

Page 2 of 3 pages

OrderID: 411603036

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (*Lab Use Only*): 411603036

EMSL Analytical, Inc.
376 Crompton Street
Charlotte, NC 28273
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
PL-A-1	11	Plaster wall interior	Plaster wall
PL-A-2	11	"	"
PL-A-3	11	"	"
PL-B-1	12	Plaster wall exterior	Plaster wall
PL-B-2	12	"	"
PL-B-3	12	"	"
PL-B-4	12	"	"
PL-B-5	12	"	"
PL-B-6	12	"	"
PL-B-7	12	"	"

*Comments/Special Instructions:

Page 3 of 3 pages

EMSL Analytical, Inc.
706 Gralin Street, Kernersville, NC 27284
Phone/Fax: (336) 992-1025 / (336) 992-4175
http://www.EMSL.com greensborolab@emsl.com

EMSL Order:	021602339
CustomerID:	FROE22
CustomerPO:	
ProjectID:	

Attn: **Thomas Tripp**
Froehling & Robertson
18 Woods Lake Road
Greenville, SC 29607

Phone:	(864) 271-2840
Fax:	(864) 271-8124
Received:	04/08/16 10:00 AM
Collected:	

Project: **177 West Broad Street**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

Client Sample Description	*Lab ID*	*Collected*	*Analyzed*	*Lead* *Concentration*
LP-1	*021602339-0001*		4/11/2016	2.0 % wt
LP-2	*021602339-0002*		4/11/2016	<0.010 % wt
LP-3	*021602339-0003*		4/11/2016	0.025 % wt

James Cole

James Cole, Laboratory Manager
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. 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. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise.

Samples analyzed by EMSL Analytical, Inc. Kernersville, NC EMSL Lab ID 102564 is accredited by the AIHA Laboratory Accreditation Program (AIHA-LAP), LLC in the Environmental Lead accreditation program for Lead in Paint Chips.

Initial report from 04/12/2016 09:53:19

OrderID: 021602339

EMSL Analytical, Inc.
706 Gralin Street

Kernersville, NC 27284
PHONE: (336) 992-1025
FAX: (336) 992-4175

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Lead (Pb) Chain of Custody

EMSL Order ID *(Lab Use Only)*: 2339

Company : Froehling & Robertson, Inc.	**EMSL-Bill to:** ☐ Different ☑ Same If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 18 Woods Lake Road	
City: Greenville **State/Province:** SC	**Zip/Postal Code:** 29607 **Country:** United States
Report To (Name): Thomas Tripp	**Telephone #:** 864-918-1513
Email Address: ttripp@fandr.com	**Fax #:** **Purchase Order:**
Project Name/Number: 177 West Broad Street	**Please Provide Results:** ☐ FAX ☑ E-mail ☐ Mail
U.S. State Samples Taken: SC	**CT Samples:** ☐ Commercial/Taxable ☐ 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

**Analysis completed in accordance with EMSL's Terms and Conditions located in the Price Guide*

Matrix	Method	Instrument	Reporting Limit	Check
Chips ☑ % by wt. ☐ mg/cm² ☐ ppm	SW846-7000B	Flame Atomic Absorption	0.01%	☐
Air	NIOSH 7082	Flame Atomic Absorption	4 µg/filter	☐
	NIOSH 7105	Graphite Furnace AA	0.03 µg/filter	☐
	NIOSH 7300 modified	ICP-AES/ICP-MS	0.5 µg/filter	☐
Wipe* ASTM ☐ non ASTM ☐ *if no box is checked, non-ASTM Wipe is assumed	SW846-7000B	Flame Atomic Absorption	10 µg/wipe	☐
	SW846-6010B or C	ICP-AES	1.0 µg/wipe	☐
	SW846-7000B/7010	Graphite Furnace AA	0.075 µg/wipe	☐
TCLP	SW846-1311/7000B/SM 3111B	Flame Atomic Absorption	0.4 mg/L (ppm)	☐
	SW846-1131/SW846-6010B or C	ICP-AES	0.1 mg/L (ppm)	☐
Soil	SW846-7000B	Flame Atomic Absorption	40 mg/kg (ppm)	☐
	SW846-7010	Graphite Furnace AA	0.3 mg/kg (ppm)	☐
	SW846-6010B or C	ICP-AES	2 mg/kg (ppm)	☐
Wastewater Unpreserved ☐ Preserved with HNO_3 pH < 2 ☐	SM3111B/SW846-7000B	Flame Atomic Absorption	0.4 mg/L (ppm)	☐
	EPA 200.9	Graphite Furnace AA	0.003 mg/L (ppm)	☐
	EPA 200.7	ICP-AES	0.020 mg/L (ppm)	☐
Drinking Water Unpreserved ☐ Preserved with HNO_3 pH < 2 ☐	EPA 200.9	Graphite Furnace AA	0.003 mg/L (ppm)	☐
	EPA 200.8	ICP-MS	0.001 mg/L (ppm)	☐
TSP/SPM Filter	40 CFR Part 50	ICP-AES	12 µg/filter	☐
	40 CFR Part 50	Graphite Furnace AA	3.6 µg/filter	☐
Other:				☐

Name of Sampler: Thomas Tripp **Signature of Sampler:** [signature]

Sample #	Location	Volume/Area	Date/Time Sampled
LP-1	Tan / Interior		4-6-16 / 1605
LP-2	Green / Interior		4-6-16 / 1608
LP-3	Gray / Interior		4-6-16 / 1615

Client Sample #'s - **Total # of Samples:** 3

Relinquished (Client):	[signature]	**Date:**	4-7-16	**Time:**	1200
Received (Lab):	JH	**Date:**	4-8-16	**Time:**	10:00

Comments:

Fx 8097 0029 1009

Page 1 of 1 pages