BWSC | Barge Waggoner Sumner & Cannon, Inc.®

March 29, 2017
BWSC File Number: 3637824

Mr. Kyle Kirschenmann, PG
Environmental Program Manager – Hazardous Materials Section
State of Tennessee, Department of Transportation
TDOT Environmental Division
James K. Polk Building, Suite 900
505 Deaderick Street
Nashville, TN 37243-0334

RE: Asbestos Assessment Report
11 Bridges on Various State Routes over Various Crossings
TDOT Const: 38945-4270-04, PIN: 125341.00
Bridge Number: 38SR0540003
Haywood County, Tennessee

Dear Mr. Kirschenmann:

Enclosed is the asbestos assessment report for the above-referenced bridge. A total of nine samples were obtained during the inspection for asbestos analyses. Asbestos minerals were not detected in any of the samples collected.

If you have any questions, please contact me at 615-252-4349 (Tom.McComb@bwsc.net).

Sincerely,

Thomas McComb, PG, CPG
Contract Manager / Project Manager
Barge Waggoner Sumner & Cannon, Inc.

Enclosure

TENNESSEE DEPARTMENT OF TRANSPORTATION
ASBESTOS ASSESSMENT REPORT

11 Bridges on Various State Routes over Various Crossings
TDOT Const: 38945-4270-04, PIN: 125341.00
Bridge Number: 38SR0540003
Haywood County, Tennessee

PREPARED BY

BWSC Barge Waggoner Sumner & Cannon, Inc.
211 Commerce Street, Suite 600
Nashville, TN 37201
BWSC Project #: 36378-24

March 29, 2017

Andy Foy (Signature)
Tennessee Asbestos Inspector Accreditation No: A-I-91607-38145

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 TDOT Bridge Identification 1
1.2 General Description 1
2.0 INSPECTION 1
2.1 Personnel and Date(s) of Inspection 2
2.2 Visual Survey 2
2.3 Access to Bridge Components 2
2.3.1 Abutment 2
2.3.2 Bridge Rails 2
2.3.3 Underside of Bridge Deck (Homogeneous Area 1) 2
2.3.4 Top of Bridge Deck (Homogeneous Areas 2 & 3) 2
2.3.5 Bridge Piers/Bents and Support 2
2.3.6 Bridge Drainage 3
2.3.7 Other 3
3.0 ANALYTICAL PROCEDURES 3
3.1 Asbestos Analysis Procedures 3
3.2 Laboratory Name and Accreditation 3
4.0 REGULATORY OVERVIEW 4
4.1 National Emission Standards for Hazardous Air Pollutants 4
4.1.1 Definitions 4
5.0 RESULTS 5
5.1 Results of Asbestos Bulk Sample Analysis 5
6.0 QUALIFICATIONS 6

TABLES

Table 1 Analytical Laboratory 3

FIGURES

Figure 1 Site Location Map 8
Figure 2 Sample Location Depiction 9

APPENDICES

Appendix A Asbestos Inspection Credentials 10
Appendix B Photographs 13
Appendix C Asbestos Sample Laboratory Analysis Data 17
Appendix D Health and Safety Plan 38

1.0 INTRODUCTION

This report presents the findings of an assessment for asbestos-containing materials (ACM) completed on the bridge identified in Section 1.1. The inspection was completed by Barge Waggoner Sumner & Cannon, Inc. (BWSC) in accordance with the State of Tennessee, Department of Transportation Environmental Division, Social and Cultural Resources Office, Hazardous Materials Section requirements.

1.1 TDOT Bridge Identification

The bridge is identified in the TDOT Project System/Bridge Management System as:

Termini: 11 Bridges on Various State Routes over Various Crossings
TDOT Const: 38945-4270-04
TDOT PIN: 125341.00
Bridge Number: 38SR0540003
County: Haywood

1.2 General Description

Bridge Number 38SR0540003 is located on SR-54 over Little Nixon Creek at LM 13.38 (38-SR054-13.88) in Haywood County, Tennessee. The bridge is a 51-foot, two-lane, three-span bridge constructed of concrete channel beams with a concrete deck and asphalt wearing surface. The bridge was constructed in 1989. The bridge is scheduled for repair. The bridge location is shown on Figure 1.

2.0 INSPECTION

The identification of ACM is performed by collecting bulk samples of suspect materials and having those samples analyzed by a laboratory. ACM are those materials found to contain greater than 1% asbestos by calibrated visual area estimation by Polarized Light Microscopy (PLM).

Bulk sampling is a procedure in which representative homogeneous sampling areas in a structure are identified and then sampled. A homogeneous sampling area is defined as an area that contains material of the same type (uniform in color and texture) and was applied during the same general period. Once the homogeneous sampling areas are identified, bulk samples of suspect materials were obtained from the homogeneous areas at the discretion of our inspectors, based on site conditions and experience.

2.1 Personnel and Date(s) of Inspection

The sampling and field activities were performed on March 8, 2017, by Andy Foy, Accredited State of Tennessee Asbestos Inspector. Copies of the inspector's and BWSC's current accreditation from the State of Tennessee are included in Appendix A.

2.2 Visual Survey

BWSC's survey began with a walk-through and visual survey of the structures located on the property. The visual survey consisted of:

- Sketching the structure and/or verifying the plans provided
- Locating and identifying homogeneous areas (HAs) of suspect materials that may contain asbestos minerals
- Determining applicable sampling locations

2.3 Access to Bridge Components

Individual bridge components were accessed by the following methods:

2.3.1 Abutment

The abutments were made of wood. No samples were collected from the abutments.

2.3.2 Bridge Rails

The rails were made of metal. No samples were collected from the rails.

2.3.3 Underside of Bridge Deck (Homogeneous Area 1)

The underside of the bridge and beams were one homogenous area constructed of concrete. Three samples labeled NC-01-01, NC-01-02, and NC-01-03 were collected from the underside of deck. Samples were obtained using hammers and chisels.

2.3.4 Top of Bridge Deck (Homogeneous Areas 2 & 3)

The bridge had an asphalt wearing surface and a concrete curb. Three samples labeled NC-02-04, NC-02-05, NC-02-06 were collected from the road stripes. Three samples labeled NC-03-07, NC-03-08, and NC-03-09 were collected from the curb. Samples were obtained using hammers and chisels.

2.3.5 Bridge Piers/Bents and Support

The bents were made of wood. No samples were collected from the bents.

2.3.6 Bridge Drainage

Deck drains were formed in concrete. BWSC did not observe any other method of drainage for the bridge.

2.3.7 Other

No other environmental concerns were observed.

3.0 ANALYTICAL PROCEDURES

3.1 Asbestos Analysis Procedures

The bulk samples are analyzed in the laboratory using PLM coupled with dispersion staining (EPA Method 600/R-93/116). PLM is an analytical method for asbestos identification, which identifies the specific asbestos minerals by their unique optical properties. The optical properties are a result of the mineral's chemical composition, physical atomic structure, and visual morphology. This is the U.S. Environmental Protection Agency (EPA) recommended method of analysis for asbestos identification in bulk samples.

Samples which contain multiple layers, or that have associated mastic or adhesive backing, are analyzed as two or more separate samples when possible.

3.2 Laboratory Name and Accreditation

The bulk samples collected for this inspection were analyzed by a laboratory that has received certification from the American Industrial Hygiene Association's (AIHA) Laboratory Accreditation Program. The name and laboratory number of the analytical laboratory that analyzed the samples for this inspection is indicated in Table 1.

Table 1 - Analytical Laboratory

Laboratory Name	Frost Environmental Services, LLC
Laboratory ID Number	198214

4.0 REGULATORY OVERVIEW

4.1 National Emission Standards for Hazardous Air Pollutants

The EPA's National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations (40 CFR 61, Subpart B) requires that all regulated asbestos-containing materials (RACM) be properly removed prior to any renovation or demolition activities that will disturb them. These regulations define RACM as:

- Friable ACM.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subject to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming, or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

4.1.1 Definitions

Significant definitions related to regulation of asbestos under NESHAPS regulations include:

Friable asbestos-containing material (ACM), is defined by the Asbestos NESHAP, as any material containing more than one percent (1%) asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy (PLM), that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure. (Sec. 61.141).

Non-friable ACM is any material containing more than one percent (1%) asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy (PLM), that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. EPA also defines two categories of non-friable ACM, Category I and Category II non-friable ACM, which are described as follows:

Category I non-friable ACM is any asbestos-containing packing, gasket, resilient floor covering or asphalt roofing product which contains more than one percent (1%) asbestos as determined using polarized light microscopy (PLM) according to the method specified in Appendix A, Subpart F, 40 CFR Part 763. (Sec. 61.141).

Category II non-friable ACM is any material, excluding Category I non-friable ACM, containing more than one percent (1%) asbestos as determined using polarized light microscopy according to the methods specified in Appendix A, Subpart F, 40 CFR Part 763 that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. (Sec. 61.141).

"Regulated Asbestos-Containing Material" (RACM) is (a) friable asbestos material, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting or abrading, or (d) Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

Friable materials are defined as those which can be crumbled, pulverized, or reduced to powder by hand pressure when dry. The NESHAP regulations also establish specific notification and control requirements for renovation and demolition work.

5.0 RESULTS

The results of the asbestos inspection are presented in the following section.

5.1 Results of Asbestos Bulk Sample Analysis

A total of nine samples were obtained from the bridge. A depiction of the sample locations is shown on Figure 2. Multiple samples of each homogeneous area were collected in accordance with State of Tennessee, Department of Transportation Environmental Division, Social and Cultural Resources Office, Hazardous Materials Section requirements and delivered to the laboratory for visual observation and microscopic analysis. The samples were selected based on homogeneous areas of suspect materials, as described in Section 2.2.

None of the sampled materials were found to contain asbestos minerals. The analytical results of all the samples collected from the bridge, along with the chain-of-custody records, are included in Appendix C.

6.0 QUALIFICATIONS

The information presented herein is based on information obtained during the site visit(s) and from previous experience. If additional information becomes available, which might impact our conclusions or recommendations, BWSC requests the opportunity to review the information, reassess the potential concerns, and modify opinions, if warranted.

This report has been prepared on behalf of the Tennessee Department of Transportation. This document is not a Bid Document or a Contract Document. Use of this report or reliance upon information contained in this report by any other party implies an agreement by that party to the same terms and conditions under which service was provided. Furthermore, any party, other than our Client, relying on this document is cautioned that all conclusions made or decisions arrived at based on their review of this document are those solely of the third party, without warranty, guarantee or promise by the author. These findings are relevant to the dates of our services and should not be relied upon to represent conditions at substantially earlier or later dates.

Figures

3,000

Feet

Scale 1" = 3,000 feet
Tennessee State Plane (feet) 4100fips
North American Datum 1983

N

BWSC Barge Waggoner Sumner & Cannon, Inc.

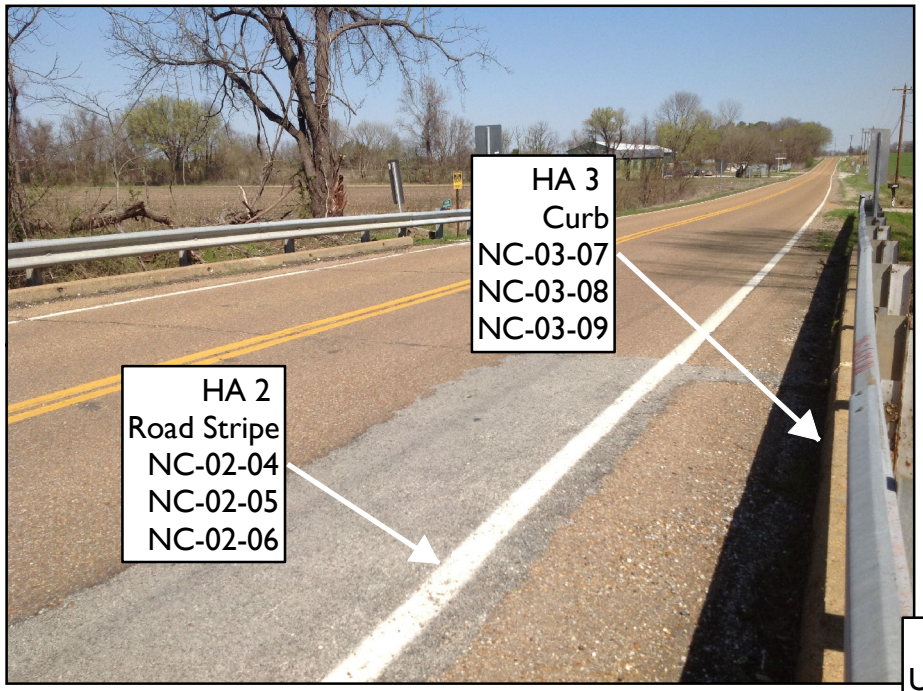
Tennessee Department Of Transportation - Asbestos Assessment Report
March 2017

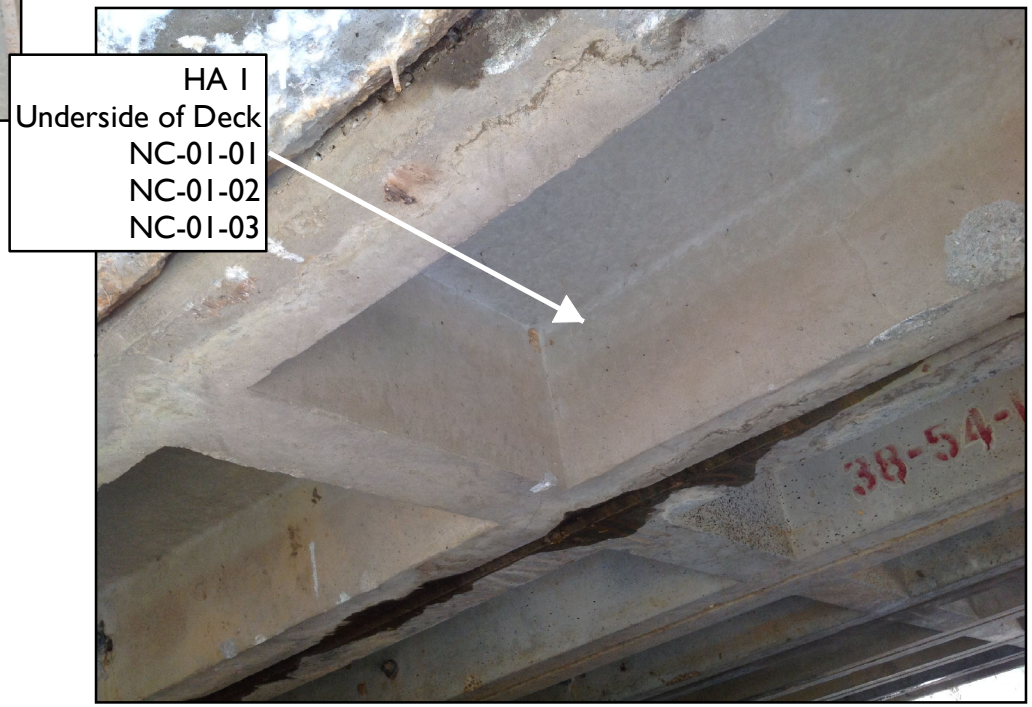
11 Bridges on Various State Routes over Various Crossings
TDOT Const: 38945-4270-04, PIN: 125341.00
Bridge Number: 38SR0540003
Haywood County, Tennessee

Figure 1 - Site Location Map

Notes:
Locations are typical of the homogeneous area, some sample locations were not visible from the angle of the photo therefore a representative location was labeled.

HA = Homogeneous Area





Tennessee Department Of Transportation - Asbestos Assessment Report
March 2017

11 Bridges on Various State Routes over Various Crossings
TDOT Const: 38945-4270-04, PIN: 125341.00
Bridge Number: 38SR0540003
Haywood County, Tennessee

Figure 2 -
Sample Location Depiction

BWSC Barge Waggoner Sumner & Cannon, Inc.

Date: 29 March 2017

Appendix A:
Asbestos Inspection Credentials

THE STATE OF TENNESSEE

Department of Environment and Conservation Division of Solid Waste Management
Toxic Substances Program
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 14th Floor Nashville TN 37243

By virtue of the authority vested by the Division of Solid Waste Management, the Company named below is hereby accreditted to offer and/or conduct Asbestos activities pursuant to Rule 1200-01-20:

Barge Waggoner Sumner and Cannon, Inc

211 Commerce Street Suite 600 Nashville TN, 37201

to conduct ASBESTOS ACTIVITIES in schools or public and commercial buildings in Tennessee. This firm is responsible for compliance with the applicable requirements of Rule 1200-01-20.

Discipline	Type	Accreditation Number	Effective Date	Expiration Date
Accreditation	Re-Accreditation	A-F-410-51910	September 01, 2016	September 30, 2017

Given under the Seal of the State of Tennessee in Nashville.

This **24th** Day of **October 2016**

Division of Solid Waste Management
Toxic Substance Program

CN-1324 **(Rev 6/13)** **RDA-3020**

THE STATE OF TENNESSEE

Department of Environment and Conservation
Division of Solid Waste Management
Toxic Substances Program

Re-Accreditation

Travis A Foy

DOB	Sex	HGT	WGT
22-Apr-1987	M	6' 3"	180

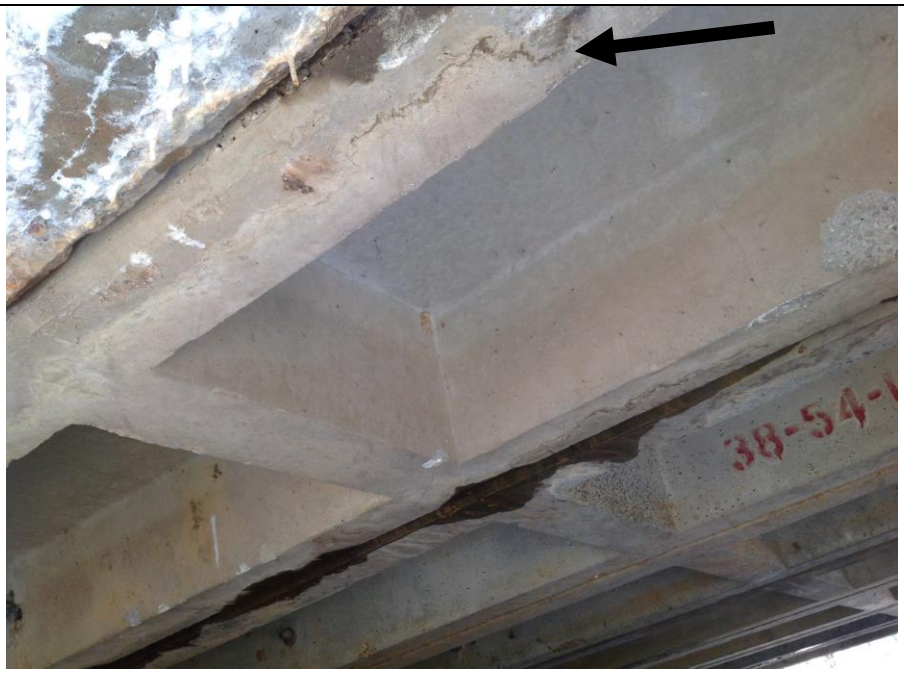
Discipline	Accreditation	Expiration
Inspector	A-I-91607-51610	Aug-31-2017
Project Designer	A-PD-91607-48515	Mar-31-2017

Asbestos Accreditation

Appendix B:
Photographs

Photographer: Andy Foy **Date:** 3/8/2017 **Description:** Photograph 1 – View across deck	

Photographer: Andy Foy **Date:** 3/8/2017 **Description:** Photograph 2 – View underneath	

Photographer: Andy Foy	
Date: 3/8/2017	
Description: Photograph 3 – Homogeneous Area 1 Underside of deck Sample Locations NC-01-01 NC-01-02 NC-01-03	

Photographer: Andy Foy	
Date: 3/8/2017	
Description: Photograph 4 – Homogeneous Area 2 Road stripe Sample Locations NC-02-04 NC-02-05 NC-02-06	

Photographer: Andy Foy	
Date: 3/8/2017	
Description: Photograph 5 – Homogeneous Area 3 Curb Sample Locations NC-03-07 NC-03-08 NC-03-09	

Appendix C:
Asbestos Sample Laboratory Analysis Data

FROST ENVIRONMENTAL SERVICES, LLC
101 Ash Court, Hendersonville, Tennessee 37075
(615) 562-2669 office • (615)-473-9047 cell • email support@frostenvllc.com

CHAIN OF CUSTODY

PROJECT: Haywood Co. Asbestos Date Collected: 3/8/17-3/9/17

PROJECT LOCATION: Haywood Co, TN Date Received By Lab: ~~3/13/17~~ 3/10/17

Turnaround Time Requeted: ____ 2-3 Hour ____ Same Day ____ 24 Hour ✓ 2-3 Day

COLLECTED BY: Andy Foy COLLECTED BY SIGNATURE: Andy F

Sample Number	Date Collected	Location	Analysis Requested	Volume
NC-01-01,02,03	3/8/17	Underside	Asbestos	
NC-02-04, 05,06		Stripe		
NC-03-07, 08,09		Curb		
54B-01-01, 02,03		Bearing pad		
54B-02-04, 05,06		Old underside		
54B-03-07, 08,09		New underside		
54B-04-10, 11,12		Old curb		
54B-05-13, 14,15		New curb		
54B-06-16, 17,18		Stripe		
87B-01-01, 02,03		Curb		
87B-02-04,05,06		Underside		
87B-03-07, 08,09		Stripe		
LC-01-01, 02,03		Old underside		
LC-02-04, 05,06		Old curb		
LC-03-07, 08,09		New curb		
LC-04-10, 11,12		New underside		

RECEIVED BY: [signature]

DATE: 3-10-17

FROST ENVIRONMENTAL SERVICES, LLC
101 Ash Court, Hendersonville, Tennessee 37075
(615) 562-2669 office • (615)-473-9047 cell • email support@frostenvllc.com

CHAIN OF CUSTODY

PROJECT: Haywood Co. Asbestos *Date Collected:* 3/8/17 - 3/9/17

PROJECT LOCATION: Haywood Co., TN *Date Received By Lab:* ~~3/13/17~~ 3/10/17

Turnaround Time Requeted: ____ 2-3 Hour ____ Same Day ____ 24 Hour ___X 2-3 Day

COLLECTED BY: Andy Foy *COLLECTED BY SIGNATURE:* Andy F

Sample Number	Date Collected	Location	Analysis Requested	Volume
LC-05-13, 14,15	3/8/17	Stripe	Asbestos	
1790-01-01, 02,03		Curb		
1790-02-04,05,06		Rail pad		
1790-03-07,08,09		Rail support		
1790-04-10,11,12		Underside		
1790-05-13,14,15		Slope wall		
1790-06-16,17,18		Bent Foundation		
1790-07-19,20,21		Stripe		
LM-01-01, 02,03		Curb		
LM-02-04, 05,06		Rail pad		
LM-03-07, 08,09		Rail support		
LM-04-10, 11,12		Underside		
LM-05-13, 14,15		Slope wall		
LM-06-16, 17,18		Stripe		
2223-01-01,02,03		Curb		
2223-02-04,05,06		Stripe		

RECEIVED BY:

DATE: 3-10-17

FROST ENVIRONMENTAL SERVICES, LLC
101 Ash Court, Hendersonville, Tennessee 37075
(615) 562-2669 office • (615)-473-9047 cell • email support@frostenvllc.com

CHAIN OF CUSTODY

PROJECT: Haywood Co, Asbestos *Date Collected:* 3/8/17 - 3/9/17

PROJECT LOCATION: Haywood Co, TN *Date Received By Lab:* 3/~~13~~10/17

Turnaround Time Requeted: ____ 2-3 Hour ____ Same Day ____ 24 Hour X 2-3 Day

COLLECTED BY: Andy Foy *COLLECTED BY SIGNATURE:* Andy F

Sample Number	Date Collected	Location	Analysis Requested	Volume
222B-03-07,08,09	3/8/17	Rail support	Asbestos	
222B-04-10,11,12		Underside		
222B-05-13,14,15		Slope wall		
~~222B-01-01, 02,03~~	~~3/9/17~~			
~~222B-02-04,05,06~~				
~~222B~~				
180B-01-01, 02,03	3/9/17	Stripe		
180B-02-04,05,06		New curb		
180B-03-07,08,09		Old curb		
180B-04-10,11,12		Rail support		
180B-05-13,14,15		Old underside		
180B-06-16,17,18		New underside		
180B-07-19,20,21		Slope wall		
180B-08-22,23,24		Rail pad		
180B-09-25,26,27		Pipe wrap		
0C-01-01, 02,03		Old curb		

RECEIVED BY: [illegible]

DATE: 3-10-17

FROST ENVIRONMENTAL SERVICES, LLC
101 Ash Court, Hendersonville, Tennessee 37075
(615) 562-2669 office • (615)-473-9047 cell • email support@frostenvllc.com

CHAIN OF CUSTODY

PROJECT: Haywood Co. Asbestos *Date Collected:* 3/8/17-3/9/17

PROJECT LOCATION: Haywood Co, TN *Date Received By Lab:* 3/~~13~~ 10/17

Turnaround Time Requeted: ____ 2-3 Hour ____ Same Day ____ 24 Hour X 2-3 Day

COLLECTED BY: Andy Foy *COLLECTED BY SIGNATURE:* Andy Foy

Sample Number	Date Collected	Location	Analysis Requested	Volume
0C-02-04, 05, 06	3/8/17	New curb	Asbestos	
0C-03-07, 08, 09		Joint		
0C-04-10, 11, 12		Stripe		
0C-05-13, 14, 15		Rail pad		
0C-06-16, 17, 18		Rail support		
0C-07-19, 20, 21		Old underside		
0C-08-22, 23, 24		Slope wall		
0C-09-25, 26, 27		Bent foundation		
0C-10-28, 29, 30		New underside		
1800-01-01, 02, 03		Curb		
1800-02-04, 05, 06		Stripe		
1800-03-07, 08, 09		Rail support		
1800-04-10, 11, 12		Joint		
1800-05-13, 14, 15		Rail pad		
1800-06-16, 17, 18		Underside		
1800-07-19, 20, 21		Bent foundation		

RECEIVED BY: [signature]

DATE: 3-10-17

FROST ENVIRONMENTAL SERVICES, LLC
101 Ash Court, Hendersonville, Tennessee 37075
(615) 562-2669 office • (615)-473-9047 cell • email support@frostenvllc.com

CHAIN OF CUSTODY

PROJECT: Haywood Co. Asbestos *Date Collected:* 3/8-9/17

PROJECT LOCATION: Haywood Co, TN *Date Received By Lab:* 3/13/17

Turnaround Time Requeted: ____ 2-3 Hour ____ Same Day ____ 24 Hour ✓ 2-3 Day

COLLECTED BY: Andy Foy *COLLECTED BY SIGNATURE:* Andy Foy

Sample Number	Date Collected	Location	Analysis Requested	Volume
1800-08-22,23,24	3/9/17	Slope wall	Asbestos	
1800-09-25,26,27		Pipe wrap		
LC2-01-01, 02,03		Curb		
LC2-02-04, 05,06		Stripe		
LC2-03-07,08,09		Rail support		
LC2-04-10,11,12		Rail pad		
LC2-05-13,14,15		Underside		
LC2-06-16,17,18		Bent foundation		
LC2-07-19,20,21		Pipe wrap		

RECEIVED BY: [illegible]

DATE: 3-10-17

FROST ENVIRONMENTAL SERVICES, LLC
339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 562-2669 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

POLARIZED LIGHT MICROSCOPY (PLM) LABORATORY ANALYSIS REPORT

(EPA/600/R-93/116 (JUNE 1993))

CLIENT: Barge Waggoner Sumner & Cannon, Inc — Date Received: 3/10/2017

PROJECT: Haywood County Asbestos — Date Analyzed: 3/20/2017

LOCATION: Haywood County TN — Date Reported: 3/22/2017

ANALYST: Jody Wilkins

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
NC-01-01	Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
NC-01-02	Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
NC-01-03	Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
NC-02-04	Stripe	White Beaded Material	100	None Detected	None Detected
NC-02-05	Stripe	White Beaded Material	100	None Detected	None Detected
NC-02-06	Stripe	White Beaded Material	100	None Detected	None Detected
NC-03-07	Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
NC-03-08	Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
NC-03-09	Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
54B-01-01	Bearing Pad	Black Fibrous Material	20	80-Cellulose	None Detected
54B-01-02	Bearing Pad	Black Fibrous Material	20	80-Cellulose	None Detected
54B-01-03	Bearing Pad	Black Fibrous Material	20	80-Cellulose	None Detected
54B-02-04	Old Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
54B-02-05	Old Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
54B-02-06	Old Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
Analysis was performed using EPA/600/R-93/116 (June 1993)), Test Method for the Determination of Asebstos in Bulk Building Materials.

FROST ENVIRONMENTAL SERVICES, LLC
339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 562-2669 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

POLARIZED LIGHT MICROSCOPY (PLM) LABORATORY ANALYSIS REPORT

(EPA/600/R-93/116 (JUNE 1993))

CLIENT: Barge Waggoner Sumner & Cannon, Inc — Date Received: 3/10/2017

PROJECT: Haywood County Asbestos — Date Analyzed: 3/20/2017

LOCATION: Haywood County TN — Date Reported: 3/22/2017

ANALYST: Jody Wilkins

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
54B-03-07	New Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
54B-03-08	New Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
54B-03-09	New Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
54B-04-10	Old Curb	Tan Cementitious Material	100	None Detected	None Detected
54B-04-11	Old Curb	Tan Cementitious Material	100	None Detected	None Detected
54B-04-12	Old Curb	Tan Cementitious Material	100	None Detected	None Detected
54B-05-13	New Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
		Gray Coating	100	None Detected	None Detected
54B-05-14	New Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
		Gray Coating	100	None Detected	None Detected
54B-05-15	New Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
		Gray Coating	100	None Detected	None Detected
54B-06-16	Stripe	White Beaded Material	100	None Detected	None Detected
54B-06-17	Stripe	White Beaded Material	100	None Detected	None Detected
54B-06-18	Stripe	White Beaded Material	100	None Detected	None Detected

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
Analysis was performed using EPA/600/R-93/116 (June 1993)), Test Method for the Determination of Asebstos in Bulk Building Materials.

FROST ENVIRONMENTAL SERVICES, LLC
339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 562-2669 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

POLARIZED LIGHT MICROSCOPY (PLM) LABORATORY ANALYSIS REPORT

(EPA/600/R-93/116 (JUNE 1993))

CLIENT: Barge Waggoner Sumner & Cannon, Inc — Date Received: 3/10/2017

PROJECT: Haywood County Asbestos — Date Analyzed: 3/20/2017

LOCATION: Haywood County TN — Date Reported: 3/22/2017

ANALYST: Jody Wilkins

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
87B-01-01	Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
87B-01-02	Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
87B-01-03	Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
87B-02-04	Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
87B-02-05	Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
87B-02-06	Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
87B-03-07	Stripe	Yellow Beaded Material	100	None Detected	None Detected
87B-03-08	Stripe	Yellow Beaded Material	100	None Detected	None Detected
87B-03-09	Stripe	Yellow Beaded Material	100	None Detected	None Detected
LC-01-01	Old Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
LC-01-02	Old Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
LC-01-03	Old Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
LC-02-04	Old Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
LC-02-05	Old Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
LC-02-06	Old Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
Analysis was performed using EPA/600/R-93/116 (June 1993)), Test Method for the Determination of Asebstos in Bulk Building Materials.

FROST ENVIRONMENTAL SERVICES, LLC
339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 562-2669 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

POLARIZED LIGHT MICROSCOPY (PLM) LABORATORY ANALYSIS REPORT

(EPA/600/R-93/116 (JUNE 1993))

CLIENT: Barge Waggoner Sumner & Cannon, Inc — Date Received: 3/10/2017

PROJECT: Haywood County Asbestos — Date Analyzed: 3/20/2017

LOCATION: Haywood County TN — Date Reported: 3/22/2017

ANALYST: Jody Wilkins

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
LC-03-07	New Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
		Gray Coating	100	None Detected	None Detected
LC-03-08	New Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
		Gray Coating	100	None Detected	None Detected
LC-03-09	New Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
		Gray Coating	100	None Detected	None Detected
LC-04-10	New Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
LC-04-11	New Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
LC-04-12	New Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
LC-05-13	Stripe	White Beaded Material	100	None Detected	None Detected
LC-05-14	Stripe	White Beaded Material	100	None Detected	None Detected
LC-05-15	Stripe	White Beaded Material	100	None Detected	None Detected
179O-01-01	Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
179O-01-02	Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
179O-01-03	Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
Analysis was performed using EPA/600/R-93/116 (June 1993)), Test Method for the Determination of Asebstos in Bulk Building Materials.

FROST ENVIRONMENTAL SERVICES, LLC
339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 562-2669 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

POLARIZED LIGHT MICROSCOPY (PLM) LABORATORY ANALYSIS REPORT

(EPA/600/R-93/116 (JUNE 1993))

CLIENT: Barge Waggoner Sumner & Cannon, Inc — Date Received: 3/10/2017

PROJECT: Haywood County Asbestos — Date Analyzed: 3/20/2017

LOCATION: Haywood County TN — Date Reported: 3/22/2017

ANALYST: Jody Wilkins

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
179O-02-04	Rail Pad	White Fibrous Material	30	10-Cellulose	60-Chrysotile
1790-02-05	Rail Pad	White Fibrous Material	30	10-Cellulose	60-Chrysotile
179O-02-06	Rail Pad	White Fibrous Material	30	10-Cellulose	60-Chrysotile
179O-03-07	Rail Support	Gray Cementitious Material	100	None Detected	None Detected
1790-03-08	Rail Support	Gray Cementitious Material	100	None Detected	None Detected
179O-03-09	Rail Support	Gray Cementitious Material	100	None Detected	None Detected
179O-04-10	Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
179O-04-11	Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
179O-04-12	Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
179O-05-13	Slope Wall	Tan/Gray Cementitious Material	100	None Detected	None Detected
179O-05-14	Slope Wall	Tan/Gray Cementitious Material	100	None Detected	None Detected
179O-05-15	Slope Wall	Tan/Gray Cementitious Material	100	None Detected	None Detected
179O-06-16	Bent Foundation	Tan/Gray Cementitious Material	100	None Detected	None Detected
179O-06-17	Bent Foundation	Tan/Gray Cementitious Material	100	None Detected	None Detected
179O-06-18	Bent Foundation	Tan/Gray Cementitious Material	100	None Detected	None Detected

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
Analysis was performed using EPA/600/R-93/116 (June 1993)), Test Method for the Determination of Asebstos in Bulk Building Materials.

FROST ENVIRONMENTAL SERVICES, LLC
339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 562-2669 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

POLARIZED LIGHT MICROSCOPY (PLM) LABORATORY ANALYSIS REPORT

(EPA/600/R-93/116 (JUNE 1993))

CLIENT: Barge Waggoner Sumner & Cannon, Inc — Date Received: 3/10/2017

PROJECT: Haywood County Asbestos — Date Analyzed: 3/20/2017

LOCATION: Haywood County TN — Date Reported: 3/22/2017

ANALYST: Jody Wilkins

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
179O-07-19	Stripe	White Beaded Material	100	None Detected	None Detected
179O-07-20	Stripe	White Beaded Material	100	None Detected	None Detected
179O-07-21	Stripe	White Beaded Material	100	None Detected	None Detected
LN-01-01	Curb	Gray Cementitious Material	100	None Detected	None Detected
LM-01-02	Curb	Gray Cementitious Material	100	None Detected	None Detected
LM-01-03	Curb	Gray Cementitious Material	100	None Detected	None Detected
LM-02-04	Rail Pad	White Fibrous Material	30	10-Cellulose	60-Chrysotile
LM-02-05	Rail Pad	White Fibrous Material	30	10-Cellulose	60-Chrysotile
LM-02-06	Rail Pad	White Fibrous Material	30	10-Cellulose	60-Chrysotile
LM-03-07	Rail Support	Tan/Gray Cementitious Material	100	None Detected	None Detected
LM-03-08	Rail Support	Tan/Gray Cementitious Material	100	None Detected	None Detected
LM-03-09	Rail Support	Tan/Gray Cementitious Material	100	None Detected	None Detected
LM-04-10	Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
LM-04-11	Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
LM-04-12	Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
Analysis was performed using EPA/600/R-93/116 (June 1993)), Test Method for the Determination of Asebstos in Bulk Building Materials.

FROST ENVIRONMENTAL SERVICES, LLC
339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 562-2669 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

POLARIZED LIGHT MICROSCOPY (PLM) LABORATORY ANALYSIS REPORT

(EPA/600/R-93/116 (JUNE 1993))

CLIENT: Barge Waggoner Sumner & Cannon, Inc — Date Received: 3/10/2017

PROJECT: Haywood County Asbestos — Date Analyzed: 3/20/2017

LOCATION: Haywood County TN — Date Reported: 3/22/2017

ANALYST: Jody Wilkins

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
LM-05-13	Slope Wall	Tan/Gray Cementitious Material	100	None Detected	None Detected
LM-05-14	Slope Wall	Tan/Gray Cementitious Material	100	None Detected	None Detected
LM-05-15	Slope Wall	Tan/Gray Cementitious Material	100	None Detected	None Detected
LM-06-16	Stripe	White Beaded Material	100	None Detected	None Detected
LM-06-17	Stripe	White Beaded Material	100	None Detected	None Detected
LM-06-18	Stripe	White Beaded Material	100	None Detected	None Detected
222B-01-01	Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
222B-01-02	Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
222B-01-03	Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
222B-02-04	Stripe	White Beaded Material	100	None Detected	None Detected
222B-02-05	Stripe	White Beaded Material	100	None Detected	None Detected
222B-02-06	Stripe	White Beaded Material	100	None Detected	None Detected
222B-03-07	Rail Support	Tan/Gray Cementitious Material	100	None Detected	None Detected
		Gray Coating	100	None Detected	None Detected

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
Analysis was performed using EPA/600/R-93/116 (June 1993)), Test Method for the Determination of Asebstos in Bulk Building Materials.

FROST ENVIRONMENTAL SERVICES, LLC
339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 562-2669 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

POLARIZED LIGHT MICROSCOPY (PLM) LABORATORY ANALYSIS REPORT

(EPA/600/R-93/116 (JUNE 1993))

CLIENT: Barge Waggoner Sumner & Cannon, Inc — Date Received: 3/10/2017

PROJECT: Haywood County Asbestos — Date Analyzed: 3/20/2017

LOCATION: Haywood County TN — Date Reported: 3/22/2017

ANALYST: Jody Wilkins

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
222B-03-08	Slope Wall	Tan/Gray Cementitious Material	100	None Detected	None Detected
		Gray Coating	100	None Detected	None Detected
222B-03-09		Tan/Gray Cementitious Material	100	None Detected	None Detected
		Gray Coating	100	None Detected	None Detected
222B-04-10	Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
222B-04-11	Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
222B-04-12	Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
222B-05-13	Slope Wall	Tan/Gray Cementitious Material	100	None Detected	None Detected
222B-05-14	Slope Wall	Tan/Gray Cementitious Material	100	None Detected	None Detected
222B-05-15	Slope Wall	Tan/Gray Cementitious Material	100	None Detected	None Detected
180B-01-01	Stripe	White Beaded Material	100	None Detected	None Detected
180B-01-02	Stripe	White Beaded Material	100	None Detected	None Detected
180B-01-03	Stripe	White Beaded Material	100	None Detected	None Detected
180B-02-04	New Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
180B-02-05	New Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
Analysis was performed using EPA/600/R-93/116 (June 1993)), Test Method for the Determination of Asebstos in Bulk Building Materials.

FROST ENVIRONMENTAL SERVICES, LLC
339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 562-2669 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

POLARIZED LIGHT MICROSCOPY (PLM) LABORATORY ANALYSIS REPORT

(EPA/600/R-93/116 (JUNE 1993))

CLIENT: Barge Waggoner Sumner & Cannon, Inc — Date Received: 3/10/2017

PROJECT: Haywood County Asbestos — Date Analyzed: 3/20/2017

LOCATION: Haywood County TN — Date Reported: 3/22/2017

ANALYST: Jody Wilkins

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
180B-02-06	New Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
180B-03-07	Old Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
		Gray Rubber Material	100	None Detected	None Detected
180B-03-08	Old Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
		Gray Rubber Material	100	None Detected	None Detected
180B-03-09	Old Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
		Gray Rubber Material	100	None Detected	None Detected
180B-04-10	Rail Support	Tan/Gray Cementitious Material	100	None Detected	None Detected
180B-04-11	Rail Support	Tan/Gray Cementitious Material	100	None Detected	None Detected
180B-04-12	Rail Support	Tan/Gray Cementitious Material	100	None Detected	None Detected
180B-05-13	Old Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
180B-05-14	Old Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
180B-05-15	Old Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
180B-06-16	New Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
180B-06-17	New Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
180B-06-18	New Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
Analysis was performed using EPA/600/R-93/116 (June 1993)), Test Method for the Determination of Asebstos in Bulk Building Materials.

FROST ENVIRONMENTAL SERVICES, LLC
339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 562-2669 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

POLARIZED LIGHT MICROSCOPY (PLM) LABORATORY ANALYSIS REPORT

(EPA/600/R-93/116 (JUNE 1993))

CLIENT: Barge Waggoner Sumner & Cannon, Inc — Date Received: 3/10/2017

PROJECT: Haywood County Asbestos — Date Analyzed: 3/20/2017

LOCATION: Haywood County TN — Date Reported: 3/22/2017

ANALYST: Jody Wilkins

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
180B-07-19	Slope Wall	Tan/Gray Cementitious Material	100	None Detected	None Detected
180B-07-20	Slope Wall	Tan/Gray Cementitious Material	100	None Detected	None Detected
180B-07-21	Slope Wall	Tan/Gray Cementitious Material	100	None Detected	None Detected
180B-08-22	Rail Pad	Gray/White Fibrous Material	10	10-Cellulose	80-Chrysotile
180B-08-23	Rail Pad	Gray/White Fibrous Material	10	10-Cellulose	80-Chrysotile
180B-08-24	Rail Pad	Gray/White Fibrous Material	10	10-Cellulose	80-Chrysotile
180B-09-25	Pipe Wrap	Black Fibrous Tar Material	70	30-Cellulose	None Detected
180B-09-26	Pipe Wrap	Black Fibrous Tar Material	70	30-Cellulose	None Detected
180B-09-27	Pipe Wrap	Black Fibrous Tar Material	70	30-Cellulose	None Detected
OC-01-01	Old Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
OC-01-02	Old Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
OC-01-03	Old Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
OC-02-04	New Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
OC-02-05	New Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
OC-02-06	New Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
Analysis was performed using EPA/600/R-93/116 (June 1993)), Test Method for the Determination of Asebstos in Bulk Building Materials.

FROST ENVIRONMENTAL SERVICES, LLC
339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 562-2669 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

POLARIZED LIGHT MICROSCOPY (PLM) LABORATORY ANALYSIS REPORT

(EPA/600/R-93/116 (JUNE 1993))

CLIENT: Barge Waggoner Sumner & Cannon, Inc — Date Received: 3/10/2017

PROJECT: Haywood County Asbestos — Date Analyzed: 3/21/2017

LOCATION: Haywood County TN — Date Reported: 3/22/2017

ANALYST: Jody Wilkins

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
OC-03-07	Joint	Gray Rubber Material	100	None Detected	None Detected
OC-03-08	Joint	Gray Rubber Material	100	None Detected	None Detected
OC-03-09	Joint	Gray Rubber Material	100	None Detected	None Detected
OC-04-10	Stripe	White Beaded Material	100	None Detected	None Detected
OC-04-11	Stripe	White Beaded Material	100	None Detected	None Detected
OC-04-12	Stripe	White Beaded Material	100	None Detected	None Detected
OC-05-13	Rail Pad	Gray/White Fibrous Material	10	10-Cellulose	80-Chrysotile
OC-05-14	Rail Pad	Gray/White Fibrous Material	10	10-Cellulose	80-Chrysotile
OC-05-15	Rail Pad	Gray/White Fibrous Material	10	10-Cellulose	80-Chrysotile
OC-06-16	Rail Support	Tan/Gray Cementitious Material	100	None Detected	None Detected
OC-06-17	Rail Support	Tan/Gray Cementitious Material	100	None Detected	None Detected
OC-06-18	Rail Support	Tan/Gray Cementitious Material	100	None Detected	None Detected
OC-07-19	Old Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
OC-07-20	Old Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
OC-07-21	Old Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
Analysis was performed using EPA/600/R-93/116 (June 1993)), Test Method for the Determination of Asebstos in Bulk Building Materials.

FROST ENVIRONMENTAL SERVICES, LLC
339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 562-2669 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

POLARIZED LIGHT MICROSCOPY (PLM) LABORATORY ANALYSIS REPORT

(EPA/600/R-93/116 (JUNE 1993))

CLIENT: Barge Waggoner Sumner & Cannon, Inc — Date Received: 3/10/2017

PROJECT: Haywood County Asbestos — Date Analyzed: 3/21/2017

LOCATION: Haywood County TN — Date Reported: 3/22/2017

ANALYST: Jody Wilkins

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
OC-08-22	Slope Wall	Tan/Gray Cementitious Material	100	None Detected	None Detected
OC-08-23	Slope Wall	Tan/Gray Cementitious Material	100	None Detected	None Detected
OC-08-24	Slope Wall	Tan/Gray Cementitious Material	100	None Detected	None Detected
OC-09-25	Bent Foundation	Tan/Gray Cementitious Material	100	None Detected	None Detected
OC-09-26	Bent Foundation	Tan/Gray Cementitious Material	100	None Detected	None Detected
OC-09-27	Bent Foundation	Tan/Gray Cementitious Material	100	None Detected	None Detected
OC-10-28	New Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
OC-10-29	New Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
OC-11-30	New Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
180O-01-01	Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
180O-01-02	Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
180O-01-03	Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
180O-02-04	Stripe	White Beaded Material	100	None Detected	None Detected
180O-02-05	Stripe	White Beaded Material	100	None Detected	None Detected
180O-02-06	Stripe	White Beaded Material	100	None Detected	None Detected

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
Analysis was performed using EPA/600/R-93/116 (June 1993)), Test Method for the Determination of Asebstos in Bulk Building Materials.

FROST ENVIRONMENTAL SERVICES, LLC
339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 562-2669 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

POLARIZED LIGHT MICROSCOPY (PLM) LABORATORY ANALYSIS REPORT

(EPA/600/R-93/116 (JUNE 1993))

CLIENT: Barge Waggoner Sumner & Cannon, Inc — Date Received: 3/10/2017

PROJECT: Haywood County Asbestos — Date Analyzed: 3/21/2017

LOCATION: Haywood County TN — Date Reported: 3/22/2017

ANALYST: Jody Wilkins

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
180O-03-07	Rail Support	Tan/Gray Cementitious Material	100	None Detected	None Detected
180O-03-08	Rail Support	Tan/Gray Cementitious Material	100	None Detected	None Detected
180O-03-09	Rail Support	Tan/Gray Cementitious Material	100	None Detected	None Detected
180O-04-10	Joint	Gray Rubber Material	100	None Detected	None Detected
180O-04-11	Joint	Gray Rubber Material	100	None Detected	None Detected
180O-04-12	Joint	Gray Rubber Material	100	None Detected	None Detected
180O-05-13	Rail Pad	Gray/White Fibrous Material	10	10-Cellulose	80-Chrysotile
180O-05-14	Rail Pad	Gray/White Fibrous Material	10	10-Cellulose	80-Chrysotile
180O-05-15	Rail Pad	Gray/White Fibrous Material	10	10-Cellulose	80-Chrysotile
180O-06-16	Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
180O-06-17	Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
180O-06-18	Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
180O-07-19	Bent Foundation	Tan/Gray Cementitious Material	100	None Detected	None Detected
180O-07-20	Bent Foundation	Tan/Gray Cementitious Material	100	None Detected	None Detected
180O-07-21	Bent Foundation	Tan/Gray Cementitious Material	100	None Detected	None Detected

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
Analysis was performed using EPA/600/R-93/116 (June 1993)), Test Method for the Determination of Asebstos in Bulk Building Materials.

FROST ENVIRONMENTAL SERVICES, LLC
339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 562-2669 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

POLARIZED LIGHT MICROSCOPY (PLM) LABORATORY ANALYSIS REPORT

(EPA/600/R-93/116 (JUNE 1993))

CLIENT: Barge Waggoner Sumner & Cannon, Inc — Date Received: 3/10/2017

PROJECT: Haywood County Asbestos — Date Analyzed: 3/21/2017

LOCATION: Haywood County TN — Date Reported: 3/22/2017

ANALYST: Jody Wilkins

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
180O-08-22	Slope Wall	Tan/Gray Cementitious Material	100	None Detected	None Detected
180O-08-23	Slope Wall	Tan/Gray Cementitious Material	100	None Detected	None Detected
180O-08-24	Slope Wall	Tan/Gray Cementitious Material	100	None Detected	None Detected
180O-09-25	Pipe Wrap	Black Fibrous Tar Material	70	30-Cellulose	None Detected
180O-09-26	Pipe Wrap	Black Fibrous Tar Material	70	30-Cellulose	None Detected
180O-09-27	Pipe Wrap	Black Fibrous Tar Material	70	30-Cellulose	None Detected
LC-01-01	Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
LC-01-02	Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
LC-01-03	Curb	Tan/Gray Cementitious Material	100	None Detected	None Detected
LC-02-04	Stripe	White Beaded Material	100	None Detected	None Detected
LC-02-05	Stripe	White Beaded Material	100	None Detected	None Detected
LC-02-06	Stripe	White Beaded Material	100	None Detected	None Detected
LC-03-07	Rail Support	Tan/Gray Cementitious Material	100	None Detected	None Detected
LC-03-08	Rail Support	Tan/Gray Cementitious Material	100	None Detected	None Detected
LC-08-09	Rail Support	Tan/Gray Cementitious Material	100	None Detected	None Detected

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
Analysis was performed using EPA/600/R-93/116 (June 1993)), Test Method for the Determination of Asebstos in Bulk Building Materials.

FROST ENVIRONMENTAL SERVICES, LLC
339 ROCKLAND ROAD, SUITE E, HENDERSONVILLE, TENNESSEE 37075
(615) 562-2669 office - (615) 473-9047 cell - email: lab@frostenvironmental.com

POLARIZED LIGHT MICROSCOPY (PLM) LABORATORY ANALYSIS REPORT

(EPA/600/R-93/116 (JUNE 1993))

CLIENT: Barge Waggoner Sumner & Cannon, Inc — Date Received: 3/10/2017

PROJECT: Haywood County Asbestos — Date Analyzed: 3/21/2017

LOCATION: Haywood County TN — Date Reported: 3/22/2017

ANALYST: Jody Wilkins

Sample Number	Location	Material Description	Binder (Non-Fibrous) Material	Non-Asbestos Fiber	Asbestos Type & Percent
LC-04-10	Rail Pad	White Fibrous Material	30	10-Cellulose	60-Chrysotile
LC-04-11	Rail Pad	White Fibrous Material	30	10-Cellulose	60-Chrysotile
LC-04-12	Rail Pad	White Fibrous Material	30	10-Cellulose	60-Chrysotile
LC-05-13	Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
LC-05-14	Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
LC-05-15	Underside	Tan/Gray Cementitious Material	100	None Detected	None Detected
LC-06-16	Bent Foundation	Tan/Gray Cementitious Material	100	None Detected	None Detected
LC-06-17	Bent Foundation	Tan/Gray Cementitious Material	100	None Detected	None Detected
LC-06-18	Bent Foundation	Tan/Gray Cementitious Material	100	None Detected	None Detected
LC-07-19	Pipe Wrap	Black Fibrous Tar Material	70	30-Cellulose	None Detected
LC-07-20	Pipe Wrap	Black Fibrous Tar Material	70	30-Cellulose	None Detected
LC-07-21	Pipe Wrap	Black Fibrous Tar Material	70	30-Cellulose	None Detected

Asbestos Containing Material (ACM) is defined as any material containing more than one percent asbestos.
Analysis was performed using EPA/600/R-93/116 (June 1993)), Test Method for the Determination of Asebstos in Bulk Building Materials.

Appendix D:
Health and Safety Plan

Health and Safety Plan

BWSC Barge Waggoner Sumner & Cannon, Inc.

Project: Haywood County ACM Inspection	Location: Haywood County, TN	Date: 2/28/17	Job No. 3637824

Project Manager	Office Number	Cell Number
Tom McComb	615-252-4349	615-210-8936

Onsite Contact	Office Number	Cell Number

Description of Field Activities

Visually inspect bridges, delineate homogeneous areas, sample potential ACM

ACTIVITY	WEATHER	BOTANY	TOOLS	JOB BRIEFING
☐ Soil Sampling	☐ Hot	☐ Poison Ivy/Oak	☐ Machete	☑ Evaluate Surroundings
☐ Sediment Sampling	☐ Cold	☐ Poison Sumac	☐ Brush hook	☐ Communications
☐ Surface-Water Sampling	☑ Mild	☐ Thistle	☐ Pick	☐ Safety Plan
☐ Ground-Water Sampling	☐ Sunny	☐ Thorns	☐ Ax	☐ Emergency Numbers
☐ Fish Sampling	☐ Fair	☐ Needle-like	☑ Hammer	☐ Lockout/Tagout
☐ Macroinvertebrate Sampling	☐ Rain	☐ Other:	☑ Knife	☐ Client Requirements
☐ Drilling	☐ Lightning		☐ Drill Rig	☐ Insect Repellent
☐ Trenching	☐ Hail		☐ Boat	☑ Reflective/Colored Vests
☑ Asbestos Inspection	☐ Sleet/Snow/Ice		☑ Truck/ATV	☐ Chemical Information
☐ Other:	☐ Night		☐ Electrical Equipment	☐ Tool Check
	TERRAIN	**WILDLIFE**	☐ Other:	☐ Equipment Check
CONSTITUENTS	☐ River	☐ Ticks		☐ First Aid Kit Check
☐ Strong Acids/Bases	☐ Creek	☐ Spiders	**TRAFFIC**	☐ Gloves
☐ Metals	☐ Lake	☐ Chiggers	☑ Heavy	☐ PFD
☐ PCBs	☐ Swamp	☐ Ants/Fireants	☐ Light	☐ Waders
☐ Pesticides	☐ Sinkholes/Collapses	☐ Wasps/Bees	☐ Boats	☑ Steel Toe Boots
☑ Asbestos	☐ Woods	☐ Hornets	☐ Railroad	☑ Hard Hat
☐ VOCs	☐ Open & Clear	☐ Dogs	☐ Planes	☑ Eye Protection
☐ SVOCs	☐ Overgrown	☐ Snakes	☑ Paved Road	☐ Sun Protection
☐ Chlorinated Solvents	☐ Trenches	☐ Hogs/Cattle	☐ Gravel Road	☐ Fall Protection
☐ Lead/Lead Paint	☐ Steep	☐ Bears	☐ Heavy Equipment	☐ Respirator
☐ Radioactive	☐ Hilly	☐ Raccoons	☐ Other:	☐ Other:
☐ Unknown	☐ Rocky	☐ Skunks		
	☐ Other: Varied	☐ Other:		

Required PPE

Reflective vest, safety boots, hard hat, eye protection

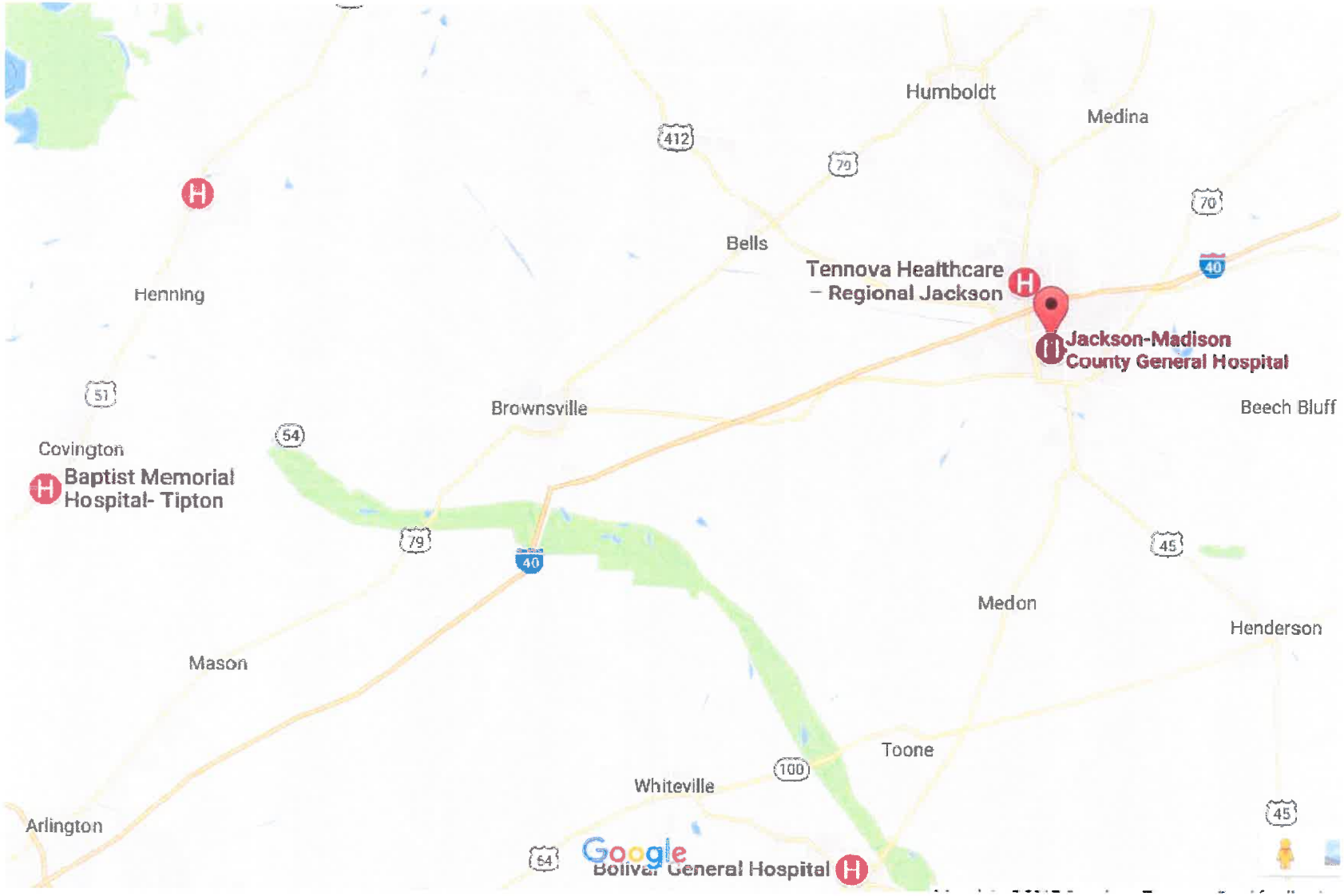
Address of Nearest Hospital (Attach Map)

1. (West): Baptist Memorial Hospital- Tipton: 1995 Hwy 51, Covington, TN 38019
(East): Jackson-Madison County General Hospital: 620 Skyline Dr, Jackson, TN 38301

2.

	Police	Fire	Ambulance
Phone Numbers to Police/Fire/Ambulance or 911	731-772-2412	731-772-1396	731-772-4979

Name:	Signature:	Date:
1. Andy Fry	Andy F	3/8/17
BRANDON POOLE	Brandon Poole	3/8/17


Humboldt
Medina
412
79
70
Bells
Tennova Healthcare
– Regional Jackson
40
Henning
Jackson-Madison
County General Hospital
51
Brownsville
Beech Bluff
54
Covington
Baptist Memorial
Hospital- Tipton
79
40
45
Medon
Henderson
Mason
Toone
100
Whiteville
45
Arlington
64
Google
Bolivar General Hospital