



ASBESTOS CONTAINING MATERIAL INVESTIGATION REPORT

US 123 (CALHOUN MEMORIAL HWY.)
NORTHBOUND BRIDGE OVER GEORGES CREEK
SCDOT BRIDGE #392012310600
SCDOT PROJECT ID: P041233
PICKENS COUNTY, SOUTH CAROLINA

PREPARED FOR:



C/O Mr. Trapp Harris, PE, DBIA
Geotechnical Engineer
Alternative Delivery
South Carolina Department of Transportation
955 Park Street
Columbia, SC 29201

PREPARED BY:

F&ME Consultants
1825 Blanding Street
Columbia, South Carolina 29201

February 9, 2023

☐ ACM was found.
☒ ACM was not found.

F&ME Project No.: G6400.110

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1. EXECUTIVE SUMMARY

This executive summary is intended as an overview for the convenience of the reader. This report should be reviewed in its entirety prior to making any decisions regarding this project.

F&ME Consultants, Inc. (FME) has completed an Asbestos Containing Material (ACM) Investigation of the US 123 (Calhoun Memorial Hwy.) Northbound Bridge over Georges Creek (Bridge) in Pickens County, South Carolina at the request of the SCDOT (Client). The field investigation was performed on January 26, 2023, in anticipation of an off-alignment replacement of the existing Bridge. This investigation was also conducted pursuant to South Carolina Department of Health and Environmental Control (SCDHEC), United States Environmental Protection Agency (USEPA), National Emission Standards for Hazardous Air Pollutants (NESHAP), and Occupational Safety and Health Administration (OSHA) regulations requiring an ACM investigation prior to any demolition activities.

Per an agreed upon scope of work, FME performed this investigation to identify any ACM that might be encountered during the demolition activities, associated with the existing Bridge, and to provide recommendations regarding proper handling and disposal of any ACM found. The investigation of the Bridge identified two (2) suspect materials: bent cap bearing pads, and black expansion joint material. During the field investigation, FME personnel collected samples of this material and assessed their physical conditions. **Laboratory results indicated that the suspect materials sampled during this investigation contained no asbestos.** Therefore, at this time, no special handling or disposal requirements are required regarding ACM. However, during the course of demolition activities, previously concealed ACM might be discovered. If suspect ACM is discovered during demolition of the existing Bridge, the affected contractor(s) must stop work, take appropriate actions, and notify the Owner/asbestos Consultant for an appropriate response action. The SCDHEC must be notified if any suspect ACM is discovered.

We sincerely appreciate the opportunity to assist you with this project. Should you have any questions or require additional information concerning this Investigation, please do not hesitate to contact our office at (803) 254-4540.

Sincerely,
F&ME CONSULTANTS



Jeffrey S. leary
Environmental Professional
Asbestos Consultant/Inspector
SCDHEC License No: BI-00789
Expiration Date 01/23/2023



Glynn M. Ellen
Environmental Department Manager

2. INTRODUCTION

FME has completed an ACM investigation of the US 123 (Calhoun Memorial Hwy.) Northbound Bridge over Georges Creek, in Pickens County, South Carolina. The investigation was performed on January 26, 2023. This investigation was conducted pursuant to SCDHEC, USEPA, NESHAP, and OSHA regulations which require an ACM investigation prior to any demolition activities. See Appendix A – Site Vicinity Map for the location of the Bridge.

It is our understanding that the proposed project will include the complete demolition and removal of the existing Bridge, and an off-alignment replacement with a new bridge structure. The purpose of this investigation was to determine if asbestos was present on the existing Bridge by identifying and sampling suspect ACM, obtaining analytical results, quantifying any confirmed ACM, and assessing the physical condition of the ACM, where possible.

This report has been prepared exclusively for the Client and shall not be disseminated in whole or part to other parties without prior consent from Client or FME. No other environmental issues were addressed as part of this report.

3. EXISTING BRIDGE STRUCTURE

The existing Northbound Bridge (~200'.0"L x 25.0'W, inside curb to inside curb), is located on US 123 (Calhoun Memorial Hwy.) and crosses over Georges Creek in Pickens County, South Carolina. The date of the original construction of the Bridge is 1957 according to date stamped on Bridge's concrete guardrail. The structure is a two (2) lane, five (5) span bridge constructed with poured-in-place (PIP) concrete decking, concrete curbing, with an asphalt overlay. The concrete decking is supported by four (4) PIP horizontal concrete beams, diaphragms and bent caps. Each bent is supported by two (2) PIP open concrete columns. Metal drainage scuppers were noted along the both sides of the Bridge to allow water drainage. Galvanized metal guardrails are attached to the concrete curbing on either side of the Bridge with newer galvanized guardrails that have been installed in front of an older guardrail system.



Photo 1: US 123 (Calhoun Memorial Hwy.) Northbound Bridge over Georges Creek in Pickens County, South Carolina

During the field investigation, FME personnel noted a utility pipe attached to the concrete decking on the south side of the Bridge which ran the entire length of the Bridge. See Appendix A – Site Vicinity Map, for the location of the Bridge. See Appendix B – Sample Location Plan, for the location of samples taken from the Bridge.

4. FIELD ASSESSMENT

During the investigation, all accessible bridge components (i.e., bent caps, expansion joints, drainage scuppers, etc.) were visually inspected for suspect ACM. Examples of possible suspect materials include pile cap materials, bond break/bearing pads, expansion joint material, and drainage scuppers. The concrete bridge deck rested directly on the horizontal concrete beams with a bearing pad between the bent caps and the horizontal concrete beams. The concrete bent caps are supported by two concrete columns with no suspect materials noted. Two (2) suspect materials were observed/visible on the Bridge. The suspect materials found associated with the Bridge were the bent cap bearing pads, and black expansion joint material. Samples of these materials were taken from random locations on the Bridge. See Appendix B – Sample Location Plan, for detailed sample locations. Also, see Appendix G – Site Photographs, for more details.

5. ASSESSMENT RESULTS

During the investigation, bent cap bearing pads, and black expansion joint material were the only suspect materials identified associated with the Bridge. A total of three (3) samples were taken of each suspect material for laboratory analysis, and their physical characteristics were recorded. The remaining structural materials (i.e., wood, steel, etc.) were not considered suspect and were not sampled.

Random samples of these suspect materials were collected for laboratory analysis, and their physical characteristics were recorded. Building materials such as concrete, metal, wood, brick, etc., were not considered suspect ACM. Bulk samples of suspect materials were analyzed by Polarized Light Microscopy (PLM) in accordance with EPA 600/R-93/116. Confirmation Transmission Electron Microscopy (TEM) was also performed on any non-friable organically bound materials that tested negative for asbestos content as per SCDHEC regulations effective May 27, 2011. A “*first positive stop*” protocol was implemented for sample testing. This protocol establishes that if the first sample of a material tested positive for asbestos content, subsequent samples were not to be analyzed, and would be considered positive as well. A total of four (4) samples were analyzed by PLM and two (2) sample were TEM-confirmed. **The results of the analysis indicated that the suspect materials sampled during this investigation contained no asbestos.** Results of laboratory analysis are summarized in Appendix C – Summary of Sample Results.

Appropriate sampling and chain-of-custody protocols were followed to ensure proper handling and delivery of samples to the analytical laboratory. Appendix D – Bulk Asbestos Analytical Report and Appendix E – Laboratory Chain of Custody were provided to show laboratory documentation of the analytical results. Appendix F – Personnel Certification, provides the qualifications for the FME Asbestos Inspectors.

6. RECOMMENDATIONS

The results, conclusions, and recommendations of this Investigation are representative of the conditions observed at the site on the date of the field investigation. FME does not assume responsibility for any changes in conditions or circumstances that may have occurred after this investigation.

It is our understanding that the subject Bridge is to be demolished in anticipation of an off-alignment replacement of the existing Bridge structure. **The results of the analysis indicated that the bent cap bearing pads, and expansion joint material sampled during this investigation contained no asbestos.** Therefore, there are no foreseen special handling or disposal requirements, i.e., regarding asbestos, that will be required for the demolition of this bridge.

If any concealed and/or inaccessible suspect ACM are encountered during the demolition activities (bond break material between the bridge deck and beams), the affected contractor(s) must stop work, take appropriate actions, and notify the Owner/asbestos Consultant for an appropriate response action. The SCDHEC must be notified if any suspect ACM is discovered.

This report has been prepared exclusively for the Client and FME and shall not be disseminated in whole or in part to other parties without prior consent from the Client and FME. Use of this document for bidding purposes is not recommended without prior consultation with FME.

We sincerely appreciate the opportunity to be of service to SCDOT in this matter. If you have any questions regarding the information presented herein, please contact our office at (803) 254-4540.

APPENDICES

Appendix A – Site Vicinity Map

Appendix B – Sample Location Plan

Appendix C – Summary of Samples

Appendix D – Laboratory Analysis Reports

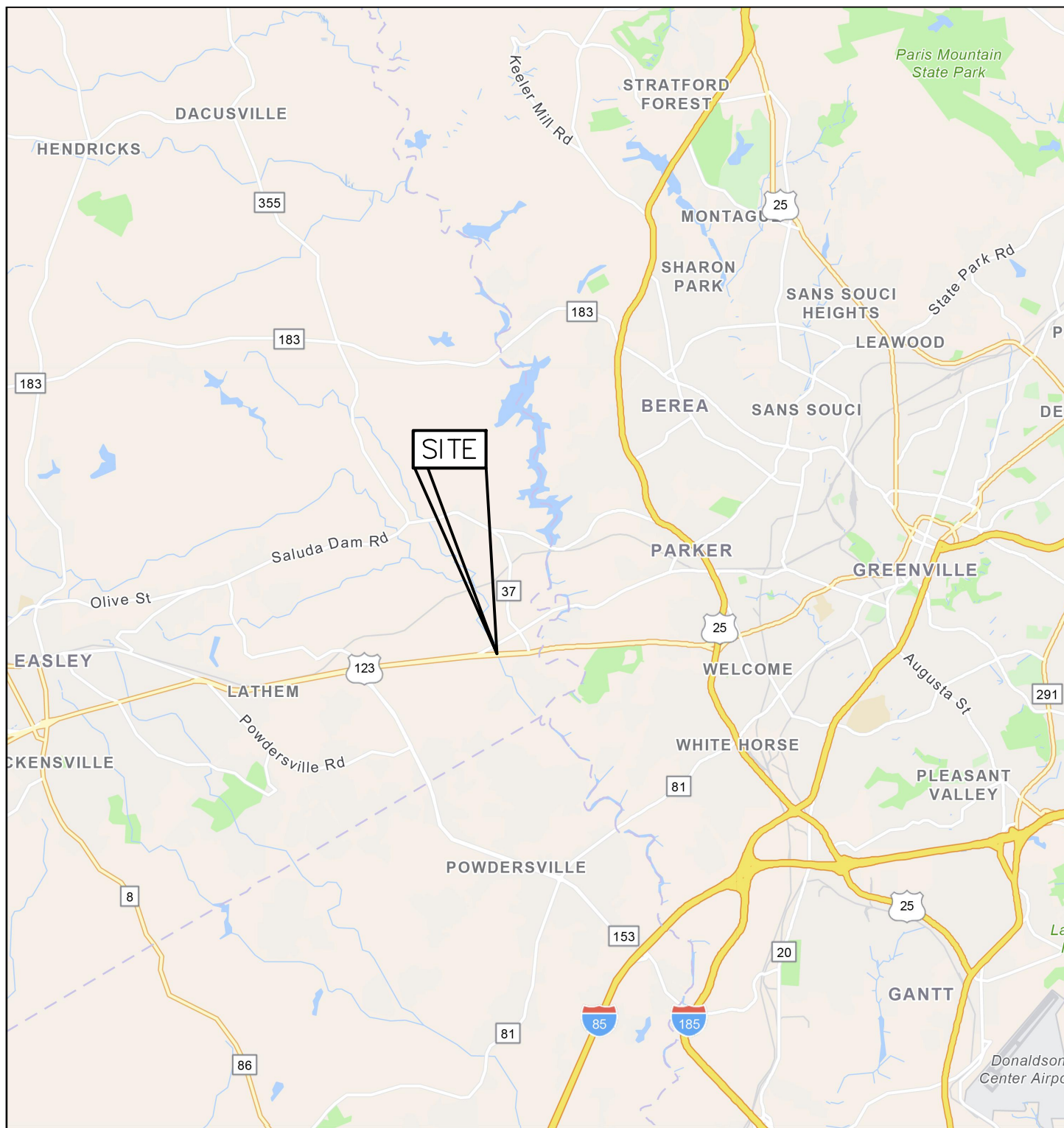
Appendix E – Chain of Custody Form

Appendix F – Personnel Certifications

Appendix G – Site Photographs

Appendix A

Site Vicinity Map



1:144,000

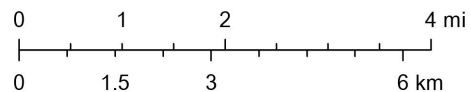


FIGURE
NUMBER:

1

F&ME CONSULTANTS
PROJECT NUMBER:

G6400.110

ASBESTOS CONTAINING MATERIALS INVESTIGATION
US 123 Northbound Bridge over Georges Creek
Pickens County, SC
Site Vicinity Map
Prepared for: SCDOT
955 Park Street
Columbia, SC 29201



1825 BLANDING STREET
COLUMBIA, SC 29201

ORIGINAL:
February 1, 2023

REVISIONS:

1 _____
2 _____
3 _____

SCALE:
AS SHOWN

DRWN. BY: JTT
CHKD. BY: MSM
APPR. BY: GME

NOTES:

Appendix B

Sample Location Plan

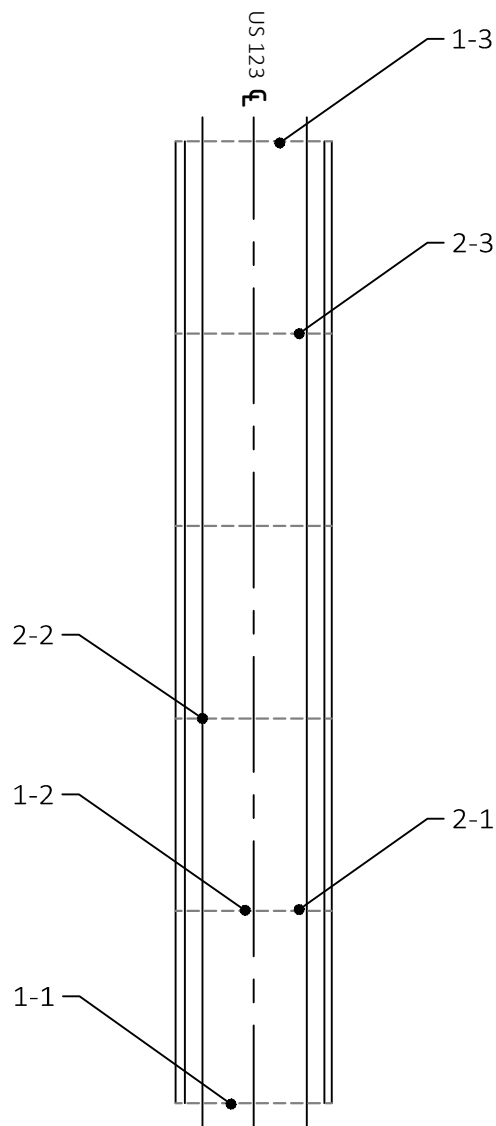


FIGURE
NUMBER:

2

F&ME CONSULTANTS
PROJECT NUMBER:

G6400.110

ASBESTOS CONTAINING MATERIALS INVESTIGATION
US 123 Northbound Bridge over Georges Creek
Pickens County, SC
Sample Location Plan

Prepared for: SCDOT
955 Park Street
Columbia, SC 29201



1825 BLANDING STREET
COLUMBIA, SC 29201

ORIGINAL:
February 1, 2023

REVISIONS:

1 _____
2 _____
3 _____

SCALE:
N.T.S.

DRWN. BY: JTT
CHKD. BY: MSM
APPR. BY: GME

NOTES:

Appendix C

Summary of Samples

Appendix C: Summary of Samples

Sample ID	Description
1-1	Bent Cap Bearing Pad
1-2	Bent Cap Bearing Pad
1-3	Bent Cap Bearing Pad
2-1	Black Expansion Joint Material
2-2	Black Expansion Joint Material
2-3	Black Expansion Joint Material



Appendix D

Laboratory Analysis Reports



EMSL Analytical, Inc.

706 Gralin Street Kernersville, NC 27284

Tel/Fax: (336) 992-1025 / (336) 992-4175

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

EMSL Order: 022300830

Customer ID: FMEC62

Customer PO: G6400.110

Project ID:

Attention: Glynn M. Ellen
F & ME Consultants
1825 Blanding Street
Columbia, SC 29201

Phone: (803) 254-4540

Fax: (803) 254-4542

Received Date: 01/27/2023 9:45 AM

Analysis Date: 01/31/2023

Collected Date:

Project: US-123 Northbound Bridge over Georges Creek

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
1-1 022300830-0001	Bent Cap Bearing Pad	Black Fibrous Heterogeneous	30% Cellulose	70% Non-fibrous (Other)	None Detected
1-2 022300830-0002	Bent Cap Bearing Pad	Black Fibrous Heterogeneous	30% Cellulose	70% Non-fibrous (Other)	None Detected
2-1 022300830-0004	Expansion Joint Material	Black Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected
2-2 022300830-0005	Expansion Joint Material	Black Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected

Analyst(s)

Bobby Wheatley (4)

Stephen Bennett, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method") but augmented with procedures outlined in the 1993 ("final") version of the method. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Kernersville, NC NVLAP Lab Code 102104-0, Virginia 3333-000228, West Virginia LT000321

Initial report from: 02/01/2023 08:31:18



EMSL Analytical, Inc.

706 Gralin Street Kenersville, NC 27284

Tel/Fax: (336) 992-1025 / (336) 992-4175

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

EMSL Order: 022300830

Customer ID: FMEC62

Customer PO: G6400.110

Project ID:

Attention: Glynn M. Ellen
F & ME Consultants
1825 Blanding Street
Columbia, SC 29201

Phone: (803) 254-4540

Fax: (803) 254-4542

Received Date: 01/27/2023 9:45 AM

Analysis Date: 01/31/2023 - 02/01/2023

Collected Date:

Project: US-123 Northbound Bridge over Georges Creek

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
1-3 022300830-0003	Bent Cap Bearing Pad	Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
2-3 022300830-0006	Expansion Joint Material	Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)

Stephen Bennett (2)

Stephen Bennett, Laboratory Manager
or other approved signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. EMSL recommends that samples reported as none detected or < 1% undergo additional analysis via PLM to avoid the possibility of false negatives.

Samples analyzed by EMSL Analytical, Inc. Kenersville, NC

Initial report from: 02/01/2023 08:31:21

Appendix E

Chain of Custody Form

EMSL ANALYTICAL, INC.
LABORATORY PRODUCTS TRAINING

Asbestos Chain of Custody

EMSL Order Number (Lab Use Only):

0830

 X
 706 GRALIN ST
 KERNERSVILLE, NC 27284
 PHONE: (336) 992-1025
 FAX: (336) 992-4175

Company Name : F&ME Consultants		EMSL Customer ID: FMEC62	
Street: 3112 Devine Street		City: Columbia	State/Province: SC
Zip/Postal Code: 29205	Country: USA	Telephone #: 803-254-4540	Fax #: 803-254-4542
Report To (Name): Glynn Ellen		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
Email Address: gellen@fmeconsultants.com, jtimmmons@fmeconsultants.com,		Purchase Order: G6400.110	
Project Name/Number: US-123 Northbound Bridge over Georges Creek		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: SC		CT Samples: <input checked="" type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	
EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different - If Bill to is Different note instructions in Comments** Third Party Billing requires written authorization from third party			
Turnaround Time (TAT) Options* - Please Check			
<input type="checkbox"/> 3 Hour <input type="checkbox"/> 6 Hour <input type="checkbox"/> 24 Hour <input type="checkbox"/> 48 Hour <input checked="" type="checkbox"/> 72 Hour <input checked="" type="checkbox"/> 96 Hour <input type="checkbox"/> 1 Week <input type="checkbox"/> 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.			
PCM - Air <input type="checkbox"/> Check if samples are from NY <input type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA		TEM - Air <input type="checkbox"/> 4-4.5hr TAT (AHERA only) <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> EPA Level II <input type="checkbox"/> ISO 10312	
PLM - Bulk (reporting limit) <input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) <input type="checkbox"/> NYS 198.1 (friable in NY) <input type="checkbox"/> NYS 198.6 NOB (non-friable-NY) <input type="checkbox"/> NYS 198.8 SOF-V <input type="checkbox"/> NIOSH 9002 (<1%)		TEM - Bulk <input checked="" type="checkbox"/> TEM EPA NOB <input type="checkbox"/> NYS NOB 198.4 (non-friable-NY) <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM Mass Analysis-EPA 600 sec. 2.5 TEM - Water: EPA 100.2 Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking	
		TEM- Dust <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167)	
		Soil/Rock/Vermiculite <input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (<1%) <input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (<0.25%) <input type="checkbox"/> TEM EPA 600/R-93/116 with milling prep (<0.1%) <input type="checkbox"/> TEM Qualitative via Filtration Prep <input type="checkbox"/> TEM Qualitative via Drop Mount Prep <input type="checkbox"/> Cincinnati Method EPA 600/R-04/004 - PLM/TEM (BC only)	
		Other: <input type="checkbox"/>	
<input checked="" type="checkbox"/> Check For Positive Stop - Clearly Identify Homogenous Group		Filter Pore Size (Air Samples): <input type="checkbox"/> 0.8µm <input type="checkbox"/> 0.45µm	
Samplers Name: James Timmons		Samplers Signature:	
Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
*1-1 thru 1-3	Bent Cap Bearing Pad		
*2-1 thru 2-3	Expansion Joint Material		
Client Sample # (s): 1-1 - 2-3		Total # of Samples: 6	
Relinquished (Client):		Date: 1/26/2023	Time: 1600
Received (Lab): JS		Date: 1-27-23	Time: 9:45am
Comments/Special Instructions: TEM 3 rd NOB.			

 EMSL FX 7965 1.597 5591
 Page 1 Of 1

Appendix F

Personnel Certifications

SCDHEC ISSUED

Asbestos ID Card

Jeffrey S Leary



AIRSAMPLER	AS-00241	Expiration Date:	01/22/24
CONSULTBI	BI-00789		01/23/24
SUPERAHERA	SA-01297		01/22/24

Appendix G

Site Photographs



Photo 1. Top View of Bridge Deck.



Photo 2. Underside View of Bridge.



Photo 3. North Side View of Bridge.



Photo 4. South Side View of Bridge.



Photo 5. Bent Cap Bearing Material



Photo 6. Black Expansion Joint Material

