

## ASBESTOS CONTAINING MATERIAL INVESTIGATION REPORT

US-1 BRIDGE OVER I-20  
LEXINGTON COUNTY, SOUTH CAROLINA

### PREPARED FOR:



Mrs. Sheri Williamson  
STV, Inc.  
454 South Anderson Road, Suite 3  
Rock Hill, South Carolina 29730

### PREPARED BY:

F&ME Consultants  
3112 Devine Street  
Columbia, South Carolina 29205

**March 25, 2019**

Yes, asbestos was found.  
 No, asbestos was not found.

F&ME Project No.: G6018.000

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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. (F&ME) completed an Asbestos Containing Materials (ACM) Investigation on the US-1 Bridge over I-20 in Lexington County, South Carolina, for STV, Inc (Sheri Williamson). The investigation was performed on March 19, 2019 and 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 and/or renovation activities.

Per an agreed upon scope of work, F&ME performed this investigation to identify any ACM that might be encountered during the demolition of the existing bridge, and to provide recommendations regarding proper handling and disposal of any ACM found. The investigation of the subject bridge identified two (2) suspect materials: black expansion joint material, and interior expansion joint board. During the field investigation, F&ME collected samples of the suspect materials and assessed the physical condition of each material. Laboratory results indicated that **both materials were non-ACM**. Therefore, at this time, no special handling or disposal requirements are required regarding ACM. However, during the course of demolition activities, previously concealed ACM may be discovered. If hidden suspect ACM is encountered, the affected contractor(s) must stop work, take appropriate actions, and notify the Owner/F&ME Consultants for an appropriate response action.

We appreciate the opportunity to assist you in this matter. If you have any questions or require additional information, please feel free to contact our office at (803) 254-4540.

Sincerely,

F&ME CONSULTANTS



**Michael S. Mincey**  
Environmental Professional  
Asbestos Consultant/Management Planner  
SCDHEC License No: MP-00196  
Expiration Date 01/21/2020



**Glynn M. Ellen**  
Environmental Department Manager  
Asbestos Consultant/Management Planner  
SCDHEC License No: ASB-22641  
Expiration Date 01/21/2020



## 2. INTRODUCTION

F&ME Consultants has completed an ACM investigation on the US-1 Bridge over I-20 in Lexington County, South Carolina. The investigation was performed on March 19, 2019, and was conducted pursuant to SCDHEC, USEPA, NESHAP, and OSHA regulations which require an ACM investigation prior to any demolition and/or renovation activities. See Appendix A – Site Vicinity Map for the location of the subject Bridge Structure.

It is our understanding that the existing bridge structure is scheduled for demolition. The scope of this investigation was to determine if asbestos was present on the present bridge structure 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 STV, Inc. and shall not be disseminated in whole or part to other parties without prior consent from STV, Inc. or F&ME Consultants, Inc. No other environmental issues were addressed as part of this report.

## 3. EXISTING BRIDGE STRUCTURE

The existing bridge structure (~270.0'L x 60'W, inside curb to inside curb), is located on US-1 and crosses over I-20 in Lexington County, South Carolina. The actual date of construction for the original bridge structure is unknown. The structure is a four-lane bridge constructed with a poured-in-place concrete bridge deck, with concrete curb and gutters, sidewalks and consists of four (4) bridge deck spans. The bridge deck spans are supported by ten (10) precast horizontal concrete beams, concrete diaphragms and each bent is supported by four (4) concrete columns with poured in place concrete bent caps. End bents are constructed with vertical concrete walls and have soil and concrete covering the piles with only the top of the concrete bent cap exposed. Galvanized guardrails and posts are attached to both ends of the bridge. The bridge approach on each end of the bridge consist of a four-lane asphalt paved roadway.



*Photo 1 – US 1 Bridge over I-20 in Lexington, SC.*

## 4. FIELD ASSESSMENT

During the inspection, all bridge components (i.e. concrete bent caps, piles, and expansion joints) were visually inspected for suspect ACM. Examples of possible suspect materials include bent and pile cap felt, bond-break pads, expansion joint material, and drainage scuppers. The bridge deck rested directly on the bent caps, with steel plates observed/visible between them. Non-suspect PVC scuppers were observed on



the sides of the bridge. A black expansion joint board and a black expansion joint material were noted during the investigation and were the only suspect materials identified. See Appendix B – Sample Location Plan, for detailed sample locations. Also, see Appendix G – Site Photographs, for more details.

## 4.1 Suspect Materials

The purpose of this investigation was to locate, sample and record the physical characteristics of suspect ACM on the subject bridge structure. Therefore, the quantities and physical condition of suspect materials were assessed, and bulk samples of these materials were submitted for laboratory analysis. The following suspect materials and approximate amounts were identified during this ACM Investigation:

- Black Expansion Joint Material (<1,000 SF)
- Expansion Joint Board (<1,000 SF)

Random samples of the 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. See Appendix C – Summary of Samples, for complete list of all samples taken. Proper sampling and chain-of-custody protocols were followed to ensure appropriate handling and delivery of samples to the analytical laboratory. Refer to Appendix F –Personnel Certifications, for SCDHEC qualifications of Investigation personnel, and Appendix E– Chain of Custody Forms, for documentation of proper handling and delivery of samples.



## 5. ASSESSMENT RESULTS

During the investigation, an expansion joint board and black expansion joint material were the only suspect materials observed on the subject bridge. Three (3) random samples of each suspect material were collected for laboratory analysis, and their physical characteristics were recorded. The remaining bridge materials (i.e. concrete, steel, etc.) were not considered suspect and were not sampled.

The bridge was a four (4) span structure, with expansion joints where the concrete bridge decks meet on the bridge, as well as where the bridge structure meets the approach slabs (i.e. expansion joints on either side of the bridge).

The samples of the suspect material were analyzed by polarized light microscopy (PLM) in accordance with EPA 600/R-93/116. A “*first positive stop*” protocol was utilized for this investigation. 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. **The results of the analysis indicated none of the suspect materials contained asbestos.** Results of laboratory analysis are summarized in Appendix C – Summary of Sample Results.

## 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 inspection. F&ME does not assume responsibility for any changes in conditions or circumstances that may have occurred after this inspection.

It is our understanding that the existing bridge structure is scheduled for demolition. All accessible suspect materials have been sampled and analyzed by an accredited laboratory and found to be negative for ACM. Therefore, there are no foreseen special handling or disposal requirements, regarding asbestos, that will be required for the demolition of this bridge.

If any concealed and/or inaccessible ACM are encountered during the demolition activities, 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 be of service to HDR, Inc., 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 Sample Results

Appendix D – Laboratory Analysis Reports

Appendix E – Chain of Custody Forms

Appendix F – Personnel Certifications

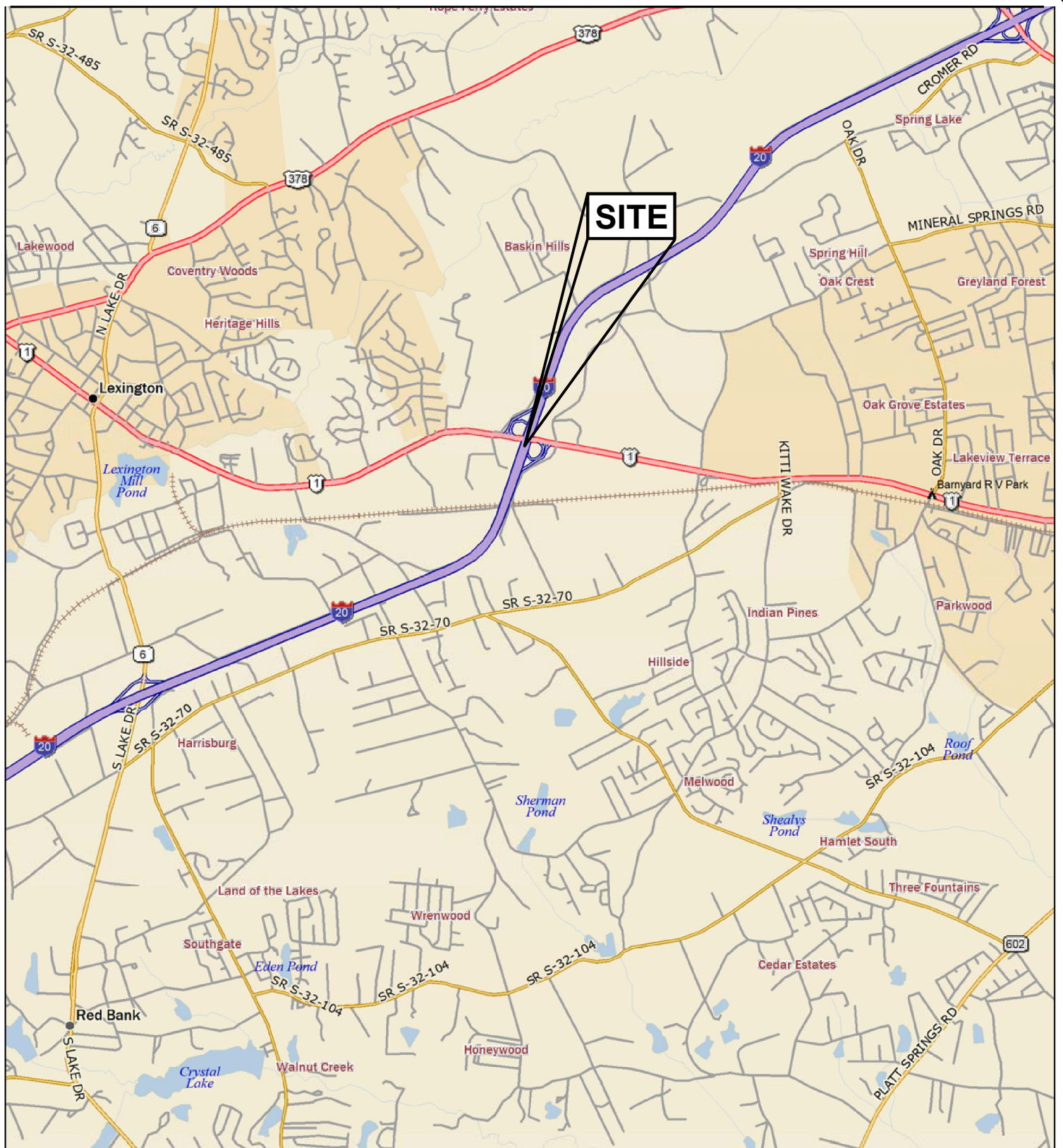
Appendix G – Site Photographs



## Appendix A

### Site Vicinity Map

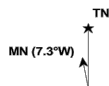




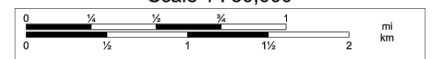
Data use subject to license.

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www.delorme.com



Scale 1 : 50,000



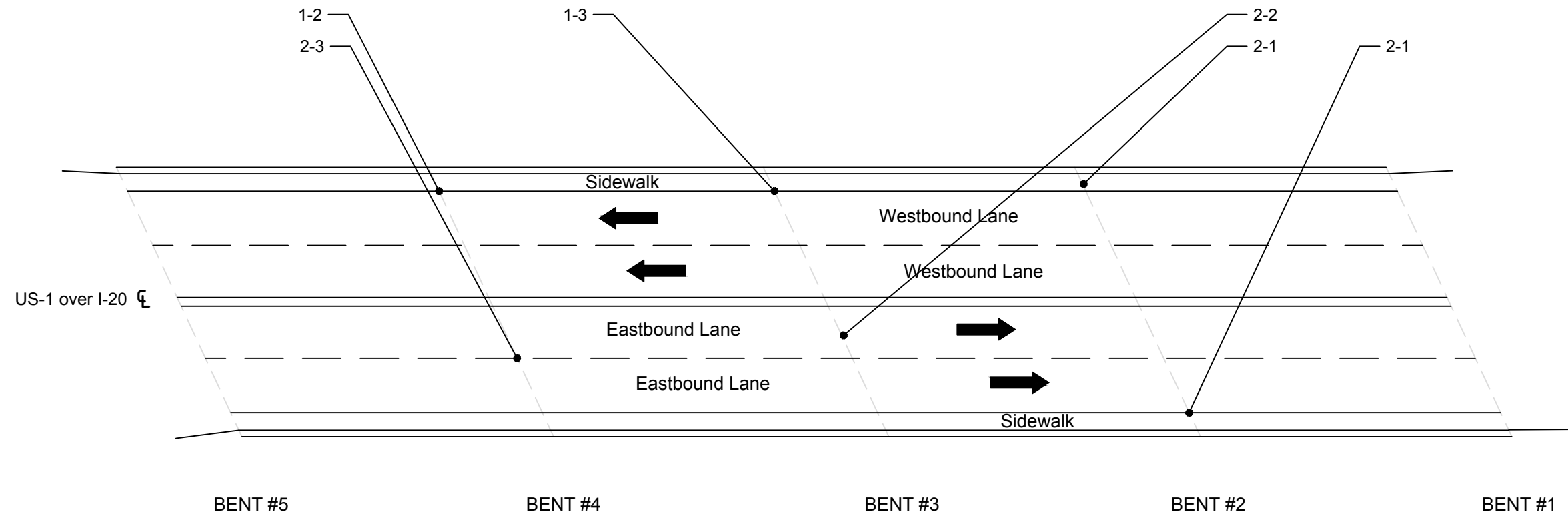
1" = 4,166.7 ft

Data Zoom 12-0

<p>FIGURE NUMBER:  1</p>	<p>F&amp;ME CONSULTANTS PROJECT NUMBER:  G6018.000</p>	<p><b>ASBESTOS CONTAINING MATERIALS INVESTIGATION</b>  <b>US-1 over I-20</b>          Lexington County, SC  <b>Site Vicinity Map</b>          Prepared for: STV, Inc.          454 South Anderson Road, Suite 3          Rock Hill, SC 29730</p>	<p><b>F&amp;ME CONSULTANTS</b>          1825 Blanding Street          Columbia ,SC 29201</p>	<p>ORIGINAL: March 20, 2019</p> <p>REVISIONS: 1 _____ 2 _____ 3 _____</p> <p>SCALE: AS SHOWN</p>	<p>DRWN. BY: CTC          CHKD. BY: MSM          APPR. BY: GME</p> <p>NOTES: _____ _____ _____</p>
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## Appendix B

### Sample Location Plan



ORIGINAL:	March 20, 2019
REVISIONS:	
1	
2	
3	
SCALE:	N.T.S.
DRWN BY: MSM	
CHKD BY: MSM	
APPR BY: GME	
NOTES:	

**F&ME CONSULTANTS**  
 GEOTECHNICAL - ENVIRONMENTAL - MATERIALS  
 2825 BLANDING STREET  
 COLUMBIA, SC 29201

**ASBESTOS CONTAINING MATERIALS INVESTIGATION**  
 US-1 over I-20  
 Lexington County, SC  
**Sample Location Map**  
 Prepared for: STV, Inc.  
 454 South Anderson Road, Suite 3  
 Rock Hill, SC 29730

F&ME CONSULTANTS  
 PROJECT NUMBER:  
**G6018.000**

FIGURE NUMBER:  
**2**

## Appendix C

### Summary of Sample Results

## Appendix C – Summary of Sampling Results

Sample ID	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
NRB-1-1	Expansion Joint Material	Brown/Black Non-Fibrous Homogeneous	1% Cellulose	1% Quartz 98% Non-Fibrous (Other)	None Detected
NRB-1-2	Expansion Joint Material	Brown/Black Fibrous Homogeneous	2% Cellulose	1% Quartz 97% Non-Fibrous (Other)	None Detected
NRB-2-1	Bridge Patch Material	Brown/Gray Non-Fibrous Heterogeneous	<1 % Cellulose	100% Non-Fibrous (Other)	None Detected
NRB-2-2	Bridge Patch Material	Brown Non-Fibrous Homogeneous	<1 % Cellulose	100% Non-Fibrous (Other)	None Detected

## 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](mailto:greensborolab@emsl.com)

**EMSL Order:** 021901878  
**Customer ID:** FMEC62  
**Customer PO:** G6018.000  
**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:** 03/20/2019 9:15 AM  
**Analysis Date:** 03/21/2019 - 03/22/2019  
**Collected Date:** 03/19/2019

**Project:** US1 over I20/ SCDOT/ G6018.000

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
1-1 <i>021901878-0001</i>	Expansion Joint Material	Brown/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1-2 <i>021901878-0002</i>	Expansion Joint Material	Brown/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2-1 <i>021901878-0003</i>	Interior Expansion Joint Material	Brown/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
2-2 <i>021901878-0004</i>	Interior Expansion Joint Material	Black Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected

Analyst(s)  
Kristie Elliott (2)  
Nicole Shutts (2)

  
Stephen Bennett, Laboratory Manager  
or Other Approved Signatory

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

Samples analyzed by EMSL Analytical, Inc. Kernersville, NC NVLAP Lab Code 102104-0, CA ELAP 2689, Virginia 3333-000228, West Virginia LT000321

Initial report from: 03/22/2019 10:53:31



# EMSL Analytical, Inc.

706 Gralin Street Kernersville, NC 27284  
Tel/Fax: (336) 992-1025 / (336) 992-4175  
<http://www.EMSL.com> / [greensborolab@emsl.com](mailto:greensborolab@emsl.com)

**EMSL Order:** 021901878  
**Customer ID:** FMEC62  
**Customer PO:** G6018.000  
**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:** 03/20/2019 9:15 AM  
**Analysis Date:** 03/22/2019  
**Collected Date:** 03/19/2019  
**Project:** US1 over I20/ SCDOT/ G6018.000

## 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 021901878-0005	Expansion Joint Material	Black Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
2-3 021901878-0006	Interior 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

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

Samples analyzed by EMSL Analytical, Inc. Kernersville, NC

Initial report from: 03/22/2019 11:16:52



## Appendix E

### Chain of Custody Forms



EMSL ANALYTICAL, INC.  
LABORATORY • PRODUCTS • TRAINING

# Asbestos Chain of Custody

EMSL Order Number (Lab Use Only):

1878

EMSL ANALYTICAL, INC.  
706 GRALIN ST.  
KERNERSVILLE, NC 27284  
PHONE: (336) 992-1025  
FAX: (336) 992-4175

Company Name : F&ME Consultants		EMSL Customer ID: FME62	
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@fmecol.com, jtimmons@fmecol.com,		Purchase Order: G6018.000	
Project Name/Number: US1 over I20/SCDOT/G6018.000		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**

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.

<p><b>PCM - Air</b> <input type="checkbox"/> Check if samples are from NY</p> <p><input type="checkbox"/> NIOSH 7400</p> <p><input type="checkbox"/> w/ OSHA 8hr. TWA</p> <p><b>PLM - Bulk (reporting limit)</b></p> <p><input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (&lt;1%)</p> <p><input type="checkbox"/> PLM EPA NOB (&lt;1%)</p> <p>Point Count</p> <p><input type="checkbox"/> 400 (&lt;0.25%) <input type="checkbox"/> 1000 (&lt;0.1%)</p> <p>Point Count w/Gravimetric</p> <p><input type="checkbox"/> 400 (&lt;0.25%) <input type="checkbox"/> 1000 (&lt;0.1%)</p> <p><input type="checkbox"/> NYS 198.1 (friable in NY)</p> <p><input type="checkbox"/> NYS 198.6 NOB (non-friable-NY)</p> <p><input type="checkbox"/> NYS 198.8 SOF-V</p> <p><input type="checkbox"/> NIOSH 9002 (&lt;1%)</p>	<p><b>TEM - Air</b> <input type="checkbox"/> 4-4.5hr TAT (AHERA only)</p> <p><input type="checkbox"/> AHERA 40 CFR, Part 763</p> <p><input type="checkbox"/> NIOSH 7402</p> <p><input type="checkbox"/> EPA Level II</p> <p><input type="checkbox"/> ISO 10312</p> <p><b>TEM - Bulk</b></p> <p><input checked="" type="checkbox"/> TEM EPA NOB</p> <p><input type="checkbox"/> NYS NOB 198.4 (non-friable-NY)</p> <p><input type="checkbox"/> Chatfield SOP</p> <p><input type="checkbox"/> TEM Mass Analysis-EPA 600 sec. 2.5</p> <p><b>TEM - Water: EPA 100.2</b></p> <p>Fibers &gt;10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking</p> <p>All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking</p>	<p><b>TEM- Dust</b></p> <p><input type="checkbox"/> Microvac - ASTM D 5755</p> <p><input type="checkbox"/> Wipe - ASTM D6480</p> <p><input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167)</p> <p><b>Soil/Rock/Vermiculite</b></p> <p><input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (&lt;1%)</p> <p><input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (&lt;0.25%)</p> <p><input type="checkbox"/> TEM EPA 600/R-93/116 with milling prep (&lt;0.1%)</p> <p><input type="checkbox"/> TEM Qualitative via Filtration Prep</p> <p><input type="checkbox"/> TEM Qualitative via Drop Mount Prep</p> <p><input type="checkbox"/> Cincinnati Method EPA 600/R-04/004 - PLM/TEM (BC only)</p> <p><b>Other:</b></p> <p><input type="checkbox"/></p>
---	---	--

Check For Positive Stop - Clearly Identify Homogenous Group      Filter Pore Size (Air Samples):  0.8µm  0.45µm

Samplers Name: Jim Timmons      Samplers Signature:

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
*1-1 thru 1-3	Expansion Joint Material		
*2-1 thru 2-3	Interior Expansion Joint Material		

Client Sample # (s): 1-1 - 2-3      Total # of Samples: 6

Relinquished (Client):      Date: 03/19/2019      Time: 11:00

Received (Lab):      Date: 3/20/19      Time: 9:15

Comments/Special Instructions: TEM 3<sup>rd</sup> Sample

① EFX 795698386432

## Appendix F

### Personnel Certifications

# SCDHEC ISSUED

## Asbestos ID Card

**Michael Mincey**



		Expiration Date:
<b>CONSULTMP</b>	<b>MP-00161</b>	<b>01/21/20</b>
<b>AIRSAMPLER</b>	<b>AS-00272</b>	<b>01/22/20</b>
<b>SUPERAHERA</b>	<b>SA-01424</b>	<b>01/22/20</b>

This card is nontransferable and becomes invalid if loaned or given to another person for identification. This card will also be invalid if altered or defaced. This card is property of SCDHEC. It must be returned to the department if the holder's accreditation is revoked or if this card is invalidated. Any person performing regulated asbestos activities without current accreditation shall be subject to legal sanction. This card must be returned upon expiration and/or issuance of a new card.

**YOU MUST HAVE THIS IDENTIFICATION CARD WITH YOU ON THE JOB.**

For information of corrections contact: SCDHEC – Asbestos Section  
2600 Bull Street  
Columbia, SC 29201  
(803) 898-4289

# SCDHEC ISSUED

## Asbestos ID Card

**Glynn M Ellen**



		Expiration Date:
<b>SUPERAHERA</b>	<b>SA-00455</b>	<b>01/22/20</b>
<b>AIRSAMPLER</b>	<b>AS-00079</b>	<b>01/22/20</b>
<b>CONSULTPD</b>	<b>PD-00098</b>	<b>06/08/19</b>
<b>CONSULTMP</b>	<b>ASB-22641</b>	<b>01/21/20</b>

This card is nontransferable and becomes invalid if loaned or given to another person for identification. This card will also be invalid if altered or defaced. This card is property of SCDHEC. It must be returned to the department if the holder's accreditation is revoked or if this card is invalidated. Any person performing regulated asbestos activities without current accreditation shall be subject to legal sanction. This card must be returned upon expiration and/or issuance of a new card.

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For information of corrections contact: SCDHEC – Asbestos Section  
2600 Bull Street  
Columbia, SC 29201  
(803) 898-4289

## Appendix G

### Site Photographs



**Photo 1.** North Side View of Bridge



**Photo 2.** SCDOT Bridge Number



**Photo 3.** View of Topside of Bridge



**Photo 4.** View of Underside of Bridge



**Photo 5.** Non-ACM Expansion Joint Board



**Photo 6.** Non-ACM Expansion Joint Material

