

## ASBESTOS CONTAINING MATERIAL INVESTIGATION REPORT

#### US 21 (FRAMPTON RD.) RBO CSX RAILROAD HAMPTON AND BEAUFORT COUNTIES, SOUTH CAROLINA

#### PREPARED FOR:



C/O Mr. Trapp Harris, PE SCDOT 955 Park Street Columbia, SC 29201

#### **PREPARED BY:**

F&ME Consultants, Inc. 211 Business Park Blvd. Columbia, South Carolina 29203

#### November 15, 2023

ACM was found.

F&ME Project No.: G6400.200

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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 21 (Frampton Rd.) Bridge over CSX Railroad (Bridge) located at the border Hampton and Beaufort Counties, South Carolina at the request of the South Carolina Department of Transportation (SCDOT) (Client). The field investigation was performed on November 8, 2023, in anticipation of an on-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: bearing pads and expansion joint material. During the field investigation, FME personnel collected samples of each of these materials 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 found, 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.

It should be noted that TEM analysis of sample 2-3, expansion joint material returned analytical result of <0.1% asbestos content. The SCDHEC considers any suspect material <1.0% asbestos to be negative. However, OSHA considers a suspect material positive if any asbestos is found in the sample. Therefore, for the purpose of this report, this material is considered to be a non-ACM material. During the demolition activities, the Contractor will be required to follow OSHA guidelines for worker protection when interacting with this material.

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

nike Muay

Michael S. Mincey Environmental Professional Asbestos Consultant/Inspector SCDHEC License No: MP-00161 Expiration Date 01/23/2024

**Glynn M. Ellen** Environmental Department Manager Asbestos Consultant/Management Planner SCDHEC License No: ASB-22641 Expiration Date 01/23/2024

## 2. INTRODUCTION

FME has completed an ACM investigation of the US 21 (Frampton Rd.) RBO CSX Railroad, located at the border Hampton and Beaufort Counties, South Carolina. The investigation was performed on November 8, 2023. This investigation was conducted pursuant to SCDHEC, USEPA, NESHAP, and OSHA regulations which require an ACM investigation prior to any demolition activities. Refer to 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 replacement with a new bridge along the existing alignment. 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 Bridge (~123.9'L x 26.0'W, inside curb to inside curb), is located on US 21 (Frampton Rd.) and crosses over CSX Railroad in Hampton and Beaufort Counties, South Carolina. The date of construction of the Bridge is unknown. The structure is a two (2) lane, three (3) span Bridge with concrete decking, and curbing and gutters, with an asphalt overlay. The concrete decking is constructed with pour-in-place (PIP) concrete, supported by six (6) horizontal steel girders. There are six (6) structural steel girders per span that are supported by PIP bent caps with two (2) steel bearing



Photo 1: US 21 (Frampton Rd.) RBO CSX Railroad in Hampton and Beaufort Counties, South Carolina.

plates between the caps and girders. Each bent cap is supported by concrete piers. No drainage scuppers were noted along the sides of the Bridge. Galvanized metal guardrails are attached to the concrete curbing on either side of the Bridge. Each side of the Bridge has one (1) utility conduit attached to the underside of the concrete guardrail system. Each conduit runs the entire length of the Bridge. Refer to Appendix A, Site Vicinity Map, for the location of the Bridge. 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, timber piles, scuppers, expansion joints, etc.) were visually inspected for suspect ACM. Examples of possible suspect materials include bearing pads, expansion joint material, and drainage scuppers. The concrete bridge deck rested directly on six (6) structural steel girders. Each steel girder was supported by two (2) steel bearing plates with a fabric bearing pad in between the bottom steel plate and the tops of each concrete bent cap. Each bent cap is supported by concrete piers. Two (2) suspect materials were observed/visible on the Bridge. The suspect materials noted on the Bridge were a fabric bearing pad and expansion joint material. Samples of these materials were taken from random locations on the Bridge. Appendix B, Sample Location Plan, for detailed sample locations. Also, see Appendix G, Site Photographs, for more details.

#### **5. ASSESSMENT RESULTS**

During the investigation, the fabric bearing pads and the expansion joint material were the only suspect materials identified associated with the Bridge. A total of three (3) samples were taken of each of these suspect materials for laboratory analysis, and physical characteristics were recorded. The remaining structural materials (i.e., concrete, 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. 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 five (5) samples were analyzed by PLM and one (1) sample was TEM-confirmed. **The results of the analysis indicated that none of the suspect materials sampled during this investigation contained asbestos**. Results of laboratory analysis are summarized in Appendix C, Summary of Sample Results.

It should be noted that TEM analysis of sample 2-3, expansion joint material returned analytical result of <0.1% asbestos content. The SCDHEC considers any suspect material <1.0% asbestos to be negative. However, OSHA considers a suspect material positive if any asbestos is found in the sample. Therefore, for the purpose of this report, this material is considered to be a non-ACM material. During the demolition activities, the Contractor will be required to follow OSHA guidelines for worker protection when interacting with this material.

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

#### **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 onalignment replacement of the existing Bridge. **The results of the analysis indicated that the fabric bearing pad and expansion joint material sampled during this investigation contained no asbestos**. Therefore, there are no foreseen special handling or disposal requirements, regarding asbestos, that will be required for the demolition of this Bridge.

It should be noted that TEM analysis of sample 2-3, expansion joint material returned analytical result of <0.1% asbestos content. The SCDHEC considers any suspect material <1.0% asbestos to be negative. However, OSHA considers a suspect material positive if any asbestos is found in the sample. Therefore, for the purpose of this report, this material is considered to be a non-ACM material. During the demolition activities, the Contractor will be required to follow OSHA guidelines for worker protection when interacting with this material.

If any concealed and/or inaccessible suspect ACM (i.e., bond break bearing materials) 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.

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.



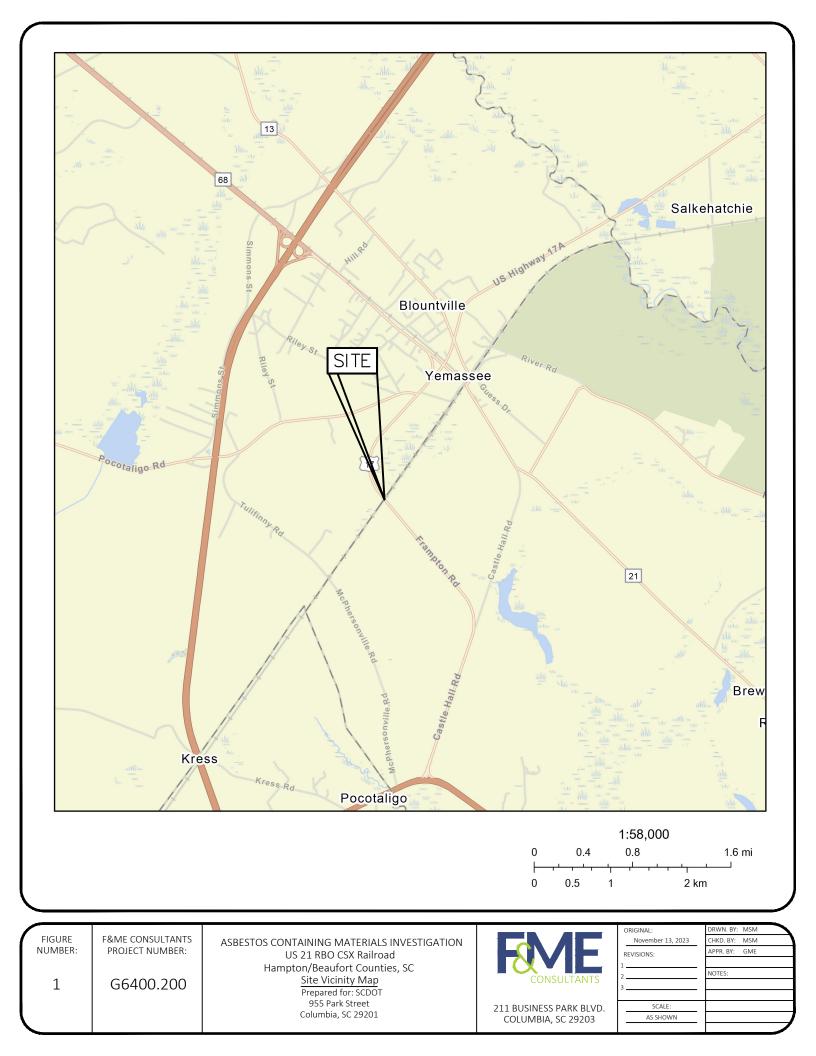
#### **APPENDICES**

- Appendix A Site Vicinity Map
- Appendix B Sample Location Plan
- Appendix C Summary of Samples
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#### Appendix A

Site Vicinity Map

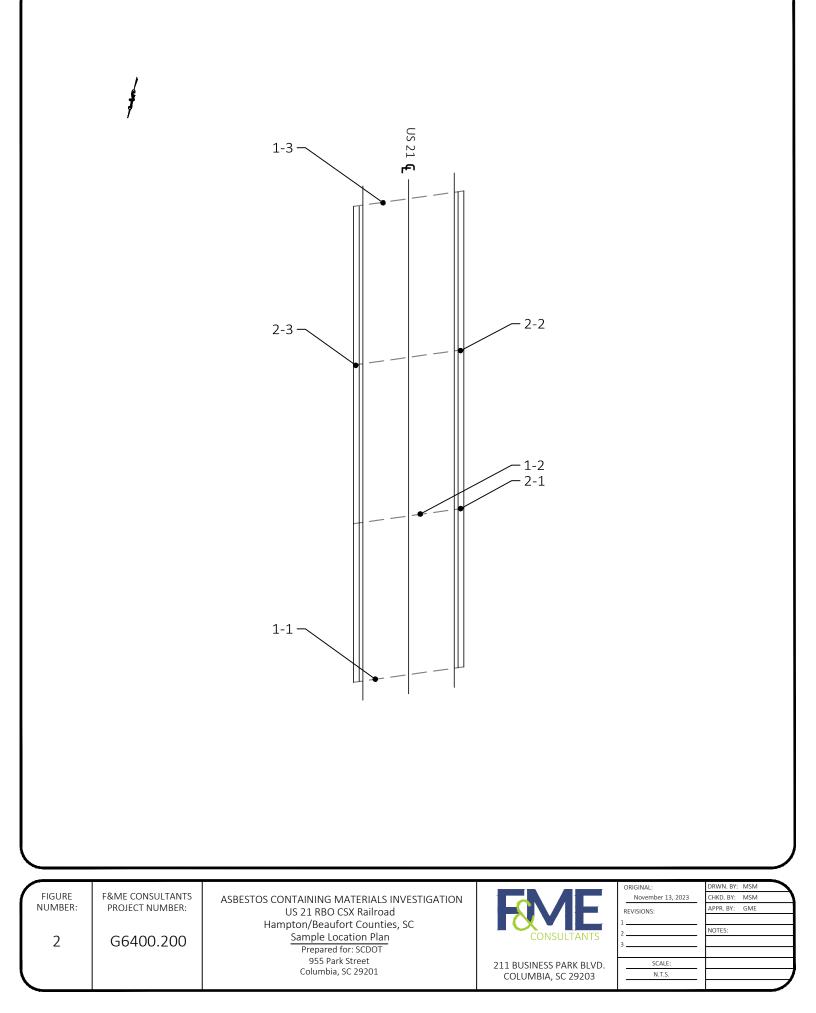




## Appendix B

Sample Location Plan





## Appendix C

Summary of Samples



## Appendix C: Summary of Samples

Sample ID	Description			
1-1	Fabric Bearing Pad			
1-2	Fabric Bearing Pad			
1-3	Fabric Bearing Pad			
2-1	Expansion Joint Material			
2-2	Expansion Joint Material			
2-3	Expansion Joint Material			



## Appendix D

Laboratory Analysis Reports



EMSL Order: 022307783 **EMSL** Analytical, Inc. Customer ID: FMEC62 706 Gralin Street Kernersville, NC 27284 Customer PO: G6400.200 Tel/Fax: (336) 992-1025 / (336) 992-4175 Project ID: http://www.EMSL.com / kernersvillelab@emsl.com Attention: Glynn M. Ellen Phone: (803) 254-4540 F & ME Consultants Fax: (803) 254-4542 211 Business Park Blvd 11/09/2023 9:30 AM **Received Date:** Columbia, SC 29203 Analysis Date: 11/09/2023 **Collected Date:** Project: US 21 over CSX Railroad

#### 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

			<u>Asbestos</u>		
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре
1-1	Bearing Pad	Brown/Gray/Tan Fibrous	80% Cellulose	20% Non-fibrous (Other)	None Detected
022307783-0001		Homogeneous			
1-2	Bearing Pad	Tan Fibrous	80% Cellulose	20% Non-fibrous (Other)	None Detected
022307783-0002		Homogeneous			
1-3	Bearing Pad	Tan Fibrous	97% Cellulose	3% Non-fibrous (Other)	None Detected
022307783-0003		Homogeneous			
2-1	Black Expansion Joint Material	Black Non-Fibrous	10% Cellulose 1% Synthetic	89% Non-fibrous (Other)	None Detected
022307783-0004		Homogeneous	,		
2-2	Black Expansion Joint	Black	1% Cellulose	99% Non-fibrous (Other)	None Detected
	Material	Fibrous	<1% Synthetic		
022307783-0005		Homogeneous			

Analyst(s)

Nicole MacDowell (3) Scott Combs (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. 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: 11/11/2023 14:26:42



ttention: Glynn M. Ellen F & ME Consultants 211 Business Park Blvd Columbia, SC 29203 
 Phone:
 (803) 254-4540

 Fax:
 (803) 254-4542

 Received Date:
 11/09/2023 9:30 AM

 Analysis Date:
 11/10/2023

 Collected Date:
 11/09/2023

Project: US 21 over CSX Railroad

#### 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
2-3 022307783-0006	Black Expansion Joint Material	Black Non-Fibrous	100.0 Other	None	<0.1% Chrysotile
		Heterogeneous			

Analyst(s)

Stephen Bennett (1)

In his

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. Kernersville, NC

Initial report from: 11/14/2023 13:32:04

## Appendix E

Chain of Custody Form





EMSL ANALYTICAL, INC.

#### Asbestos Chain of Custody

EMSL Order Number (Lab Use Only):

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PHONE: (336) 992-1025 FAX: (336) 992-4175

Company Name : F&ME Consultants			EMSL Customer ID: FMEC62					
Street: 211 Business Park Blvd. Columbia, SC			City: Columbia			State/Provi	nce: SC	
Zip/Postal Code: 29203	<u> </u>	Country: USA	Telephone #: 803-254-454		540	Fax #: 803-	-254-4542	
Report To (Name): Glyn	n Ellen, Jim	Timmons	Please Provide Results: 🔲 Fax 🛛 Email					
Email Address: gellen@ mmincey@fmeconsultar	Purchase C	)rder: G6400.	.200					
Project Name/Number:		CSX Railroad		ect ID (Interna				
U.S. State Samples Take		Sill to: 🛛 Same 🗌 Different -		s: Comme			idential/Tax Exempt	
	Emot-b	Third Party Billing requires writ				(5		
		Turnaround Time (TAT)						
	Hour lease call at	24 Hour     48 Hour     48 Hour     48 Hour     48 Hour	n charge for 3 H		6 Hour			
authorization form	for this service		with EMSL's Te	ms and Conditio	ons located in	the Analytical	Price Guide	
PCM - Air Check if sai	mples are	<u>TEM – Air</u> 🗍 4-4.5hr TAT (	(AHERA only)	TEM- Dust	t			
NIOSH 7400		AHERA 40 CFR, Part 76	63	🗌 Microva	ac - ASTM	D 5755		
🔲 w/ OSHA 8hr. TWA		NIOSH 7402		Wipe - A	ASTM D64	80		
PLM - Bulk (reporting lin		EPA Level II				(EPA 600/J-	93/167)	
PLM EPA 600/R-93/11	6 (<1%)	□ ISO 10312		-	ck/Vermiculite			
PLM EPA NOB (<1%)		TEM - Bulk			PLM EPA 600/R-93/116 with milling prep (<1%)			
Point Count	(-0.1%)				□ PLM EPA 600/R-93/116 with milling prep (<0.25%)			
Point Count w/Gravimetric	• •	NYS NOB 198.4 (non-friable-NY) Chatfield SOP		TEM EPA 600/R-93/116 with milling prep (<0.1%)				
☐ 400 (<0.25%) ☐ 1000		TEM Mass Analysis-EPA 600 sec. 2.5		TEM Qualitative via Drop Mount Prep				
D NYS 198.1 (friable in N	NY)	TEM - Water: EPA 100.2		Cincinn	Cincinnati Method EPA 600/R-04/004 – PLM/TEM (BC only)			
NYS 198.6 NOB (non-	friable-NY)	Fibers >10µm 🗍 Waste 🗌 Drinking		Other:				
□ NYS 198.8 SOF-V □ NIOSH 9002 (<1%)		All Fiber Sizes						
		L						
Check For Positive Si	op – cleany	Identify Homogenous Grou		· Pore Size (A				
Samplers Name: Mike M	incey		Sampler	s Signature:	Ma	h m	nay	
Sample #		Sample Descripti	ion			Area (Air) (Bulk)	Date/Time Sampled	
1-1 thru 1-2	1-1 thru 1-2 Bearing Pad							
*2-1 thru 2-2	*2-1 thru 2-2 Black Expansion Joint Material							
				ł				
		·						
					<b> </b>			
Client Sample # (s):	<u> </u>		2-3		Total # of	Samples:	6	
Relinquished (Client):	Mil	Mancy Date		1/8/2023		Time	: 17:00	
Received (Lab):	5	Date	1100	13		Time	0:20	
Comments/Special Instructions: SC Guidelines, TEM 3rd Sample								

Controlled Document - Asbestos COC - R10 - 05/09/2016

EFX 1967 395 Page 1 00 1

Page 1 of \_/\_ pages

## Appendix F

Personnel Certifications



## SCDHEC ISSUED Asbestos ID Card

#### **Glynn M Ellen**



		Expiration Date:
AIRSAMPLER	AS-00079	01/22/24
CONSULTMP	ASB-22641	01/23/24
CONSULTPD	PD-00098	07/11/24
SUPERAHÉRA	SA-00455	01/22/24

This card is nontransferable and considered 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

## **Michael Mincey**



AIRSAMPLER CONSULTMP	AS-00272 MP-00161
SUPERAHERA	SA-01424

Expiration Date: 01/22/24 01/23/24 01/22/24

This card is nontransferable and considered 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 Appendix G

Site Photographs





**Photo 1.** Top View of Bridge Deck.



Photo 2. Underside View of Bridge.



Photo 3. Southeast Side View of Bridge.



Photo 4. Southwest Side View of Bridge.



**Photo 5.** End Bent Underside View.



**Photo 6.** SCDOT Bridge Asset Placard Attached to the Concrete Guardrail.

