



**Asbestos & Lead-Based Paint
Assessment
I-77 North Bound over US 21
Structure No. 401007712200
Blythewood, South Carolina
S&ME Project No. 23610178A**

INSPECTION PERFORMED BY:

**Dayne Tanis & Travis Knight
SCDHEC Lic. BI-002049 & BI-00885
Inspection Dates: December 1, 2023**

- ☐ Asbestos was NOT found
- ☒ Asbestos WAS found

- ☐ Lead-based Paint was NOT found
- ☒ Lead-based Paint WAS found

Report Expiration: December 2026

PREPARED FOR:

**RS&H, Inc.
1520 South Boulevard
Suite 200
Charlotte, North Carolina 28203**

PREPARED BY:

**S&ME, Inc.
134 Suber Road
Columbia, SC 29210
(803) 561-9024**

December 12, 2023



December 12, 2023

RS&H, Inc.
1520 South Boulevard
Suite 200
Charlotte, North Carolina 28203

Attention: Mr. Kenneth J. Herring

Reference: **Asbestos & Lead-Based Paint Assessment**
I-77 North Bound over US 21
Structure No. 40100771220
Blythewood, South Carolina
S&ME Project No. 23610178A

Dear Mr. Herring:

S&ME, Inc. (S&ME) is pleased to provide the enclosed report detailing our Asbestos and Lead-Based Paint Assessment of the I-77 North Bound Bridge over US Highway 21 located in Blythewood, South Carolina (Structure No. 401007712200). Our services consisted of an asbestos assessment and lead-based paint assessment. Our services were performed in general accordance with SUBCONTRACT FOR PROFESSIONAL SERVICES between RS&H, Inc. and S&ME, Inc. dated May 1, 2023. The enclosed report includes the executive summary, project background, investigative procedures, findings and results, and conclusions and recommendations as necessary.

This report is provided for the use of the RS&H, Inc. and the South Carolina Department of Transportation (SCDOT). Use of this report by any other parties will be at such party's sole risk and S&ME, Inc. disclaims liability for any such use or reliance by third parties. The results presented in this report are indicative of conditions only during the time of the assessment.

In accordance with South Carolina Department of Health and Environmental Control Regulation 61-86.1 Standards of Performance for Asbestos Projects, this asbestos assessment report will remain valid for a period of three years from the date of inspection (December 1, 2023).



Asbestos & Lead-Based Paint Assessment
I-77 North Bound over US 21
Blythewood, South Carolina
S&ME Project No. 23610178A

We appreciate the opportunity to provide you with our environmental services. If you have any questions concerning this report, please call us at (803) 561-9024.

Sincerely,

S&ME, Inc.

A handwritten signature in black ink, appearing to read 'Travis Knight'.

Travis Knight, CSP, CHMM
Asbestos Building Inspector
(SCDHEC License No. BI-00885)

A handwritten signature in black ink, appearing to read 'Tom Behnke'.

Tom Behnke, P.G., CHMM
Project Manager/Senior Reviewer
(SCDHEC License No. MP-00004)



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Executive Summary

An asbestos assessment and lead-based paint assessment was conducted on December 1, 2023, of the I-77 North Bound Bridge over US Highway 21 (Structure No. 401007712200) in Blythewood, South Carolina. The purpose of the assessment was to identify asbestos-containing materials (ACMs) and lead-based paint coatings associated with the structure prior to repair activities.

The bridge consists of a four-lane asphalt paved roadway with concrete deck and concrete guard rails resting on metal beams on concrete bents supported by concrete piers. The bridge is approximately 265 feet long and 60 feet wide. It is our understanding that the bridge is scheduled for future renovation/demolition actions.

Asbestos

The asbestos assessment was performed in general accordance with the South Carolina Department of Health and Environmental Control (SCDHEC) Regulation 61-86.1, *Standards of Performance for Asbestos Projects* effective May 27, 2011. The asbestos assessment included the bulk sampling and analysis of suspect ACMs from the structure. The suspect materials identified on the bridge structure consisted of gray expansion joint and tan expansion joint.

The Environmental Protection Agency (EPA) and SCDHEC define materials as asbestos-containing if an asbestos content of greater than one percent (>1%) is detected in a representative sample. *Asbestos, in concentrations >1%, was identified as a result of the assessment.* Below is a summary of the identified ACMs:

Table E-1: Summary of Asbestos-Containing Materials

Material	Material Location	Asbestos Type & Percent	Condition	¹ Approx. Quantity
Concrete Surface Texture	Concrete sides/rail	2% Chrysotile	Good	2,000 SF

SF = square feet

¹The quantities are estimated and should be field verified for bidding purposes.

Lead-Based Paint

Painted surfaces associated with the bridge structure were considered suspect and analyzed for lead content. Painted surfaces exceeding the SCDHEC disposal criteria of 0.7 milligrams per square centimeter (mg/cm²) were considered lead-based paint for the purpose of this assessment. Tested surfaces that exceeded the 0.7 mg/cm² threshold include:

- Green structural steel (6.6-7.6 mg/cm²)

This summary is for convenience only and should not be relied upon without first reading the full contents of this report, including appended materials.



1.0 Introduction

S&ME was contracted to perform an asbestos assessment and lead-based paint assessment of the I-77 North Bound Bridge over US Highway 21 in Blythewood, South Carolina. The bridge is identified as structure number 401007712200. These services were requested by RS&H, Inc. We understand the bridge is scheduled for renovation and/or demolition activities. The asbestos and lead-based paint assessment was performed on December 1, 2023.

The bridge consists of a four-lane asphalt paved roadway with concrete deck and concrete guard rails resting on concrete bents supported by concrete piers. The bridge is approximately 265 feet long and 60 feet wide. It is our understanding that the bridge is scheduled for future renovation/demolition actions.

Asbestos Assessment

The asbestos assessment was performed to identify and sample suspect ACMs in accordance with regulatory requirements for structures scheduled to be renovated or demolished. Demolition and renovation activities are regulated by OSHA, EPA and SCDHEC. The EPA and SCDHEC require asbestos assessments, conducted by licensed individuals, prior to renovation and/or demolition projects. Code 40 of Federal Regulations Part 61-86.1 require asbestos assessments, followed by the proper removal, and disposal of ACM that is affected by renovation or demolition. The identification of ACMs will aid in the prevention of occupational exposures and/or environmental releases of airborne asbestos. Identification of ACM is also required by OSHA 1926.1101. The EPA, OSHA and SCDHEC define ACM as materials containing greater than one (1) percent asbestos in a representative sample. However, OSHA regulates materials containing less than or equal to one percent asbestos. Identification of ACMs also complies with Title 40 Code of the Federal Regulations, part 61, and State Regulation 61-86.1 enforced by the SCDHEC, along with Title 29 Code of Federal Regulations, part 1926 enforced by OSHA.

Section 2.0 describes the assessment procedures used, results of the suspect ACMs sampled and analyzed, confirmed ACMs located on the structure, and conclusions and recommendations regarding the subject bridge as related to ACMs.

Lead-Based Paint Assessment

The purpose of the lead-based paint assessment was to identify observable lead-based paint finishes associated with the structure which may be adversely affected by future renovation or demolition activities. The identification of these materials will aid in the compliance of occupational exposure (OSHA) and/or environmental releases of airborne lead dust in accordance with 29 CFR 1926.62 (Lead in Construction) and provide information to facilitate proper disposal of lead-based paint coated components and debris in accordance with the SCDHEC and EPA.

2.0 Asbestos Assessment

2.1 Assessment Procedures

The asbestos assessment was performed by observing and collecting random samples of suspect asbestos-containing materials associated with the subject bridge structure. Significant destructive investigative techniques



and sampling was not performed as part of this assessment. Consequently, the possibility exists that suspect materials were not detected in inaccessible areas such as voids, elevated locations, or in areas deemed unsafe to access by the asbestos inspector. If additional suspect materials are discovered during future renovation or demolition activities, destructive actions to the suspect ACM should not proceed until bulk samples are collected and analyzed for asbestos content.

The suspect materials identified on the bridge structure consisted of reflector mastic, expansion joint, and concrete surfacing texture.

A sampling strategy was developed to provide representative samples of the suspect asbestos-containing materials in accordance with OSHA, SCDHEC and EPA. Bulk samples were then extracted from suspect ACMs, recorded on a chain of custody record and submitted to Eurofins CEI (PLM) lab in Cary, North Carolina for analysis. Non-friable, organically bound (NOB) samples that tested negative via PLM were submitted to Eurofins CEI asbestos laboratory in Cary, North Carolina for analysis via transmission electron microscopy (TEM).

Polarized Light Microscopy (PLM)

The suspect materials were analyzed by trained microscopists using PLM techniques coupled with dispersion staining in accordance with EPA Test Method Title 40 Code of Federal Regulations, Chapter I (1-1-87 edition), Part 763, Subpart F-APPENDIX A. This method identifies asbestos mineral fibers based on six optical characteristics: morphology, birefringence, refractive index, extinction angle, sign of elongation and dispersion staining colors. The laboratory analysis reports the specific type of asbestos identified (there are six asbestos minerals) and the percentage of asbestos presents.

Transmission Electron Microscopy (TEM)

In accordance with SCDHEC Regulation 61-86.1, Transmission Electron Microscopy (TEM) confirmation analysis is required to be performed on one sample of any non-friable organically bound material (NOB) that tests negative via PLM analysis. The TEM analysis was performed by Eurofins CEI using EPA 600 Method in accordance with ASTM E2356.

Both the PLM and the TEM laboratories are accredited by the National Voluntary Laboratory Accreditation Program (NVLAP), which is administered by the National Institute of Standards and Technology.

2.2 Findings and Results

The asbestos assessment conducted on December 1, 2023, included the quantification and random bulk sampling of various suspect asbestos-containing materials associated with the bridge structure. The suspect materials consisted of black reflector mastic, black expansion joint, and concrete surfacing texture. Drainage scuppers observed were metal. The EPA and SCDHEC define materials as asbestos-containing if an asbestos content >1% is detected in a representative sample. In accordance with SCDHEC Regulation 61-86.1, TEM analysis was performed on one sample of each of the following non-friable, organically-bound (NOB) materials from the bridge that displayed a result of no asbestos detected via PLM analysis:



- Black reflector mastic
- Black expansion joint

Of the representative materials sampled and analyzed during this assessment, asbestos in concentrations >1% **was** identified. Below is a summary of the identified ACMS:

Table 2-1: Summary of Asbestos-Containing Materials

Material	Material Location	Asbestos Type & Percent	Condition	¹ Approx. Quantity
Concrete Surface Texture	Concrete sides/rail	2% Chrysotile	Good	2,000 SF

SF = square feet

¹The quantities are estimated and should be field verified for bidding purposes.

A table summarizing the sample number, location, type of material tested, approximate quantity of the material sampled, condition of the material, and corresponding result for each sample is provided in **Appendix I**. Site location exhibits and photographs are provided in **Appendix II**. The laboratory report is provided in **Appendix III**. A copy of the inspector's SCDHEC license is provided in **Appendix V**.

3.0 Lead-Based Paint Assessment

3.1 Assessment Procedures

The lead-based paint assessment was conducted for compliance with the SCDHEC limit of 0.7 milligrams (mg) of lead per square centimeter (cm²) of painted surface for lead-based paint coated waste. SCDHEC, Health Division defines lead-based paint as a coating containing lead in quantities ≥ 0.7 mg/cm² (SCDHEC, Health Division definition #4-53-1320f). Any coated surfaces meeting or exceeding the SCDHEC limit of 0.7 mg/cm² were considered lead-based paint for the purpose of this assessment.

OSHA does not recognize a threshold level of lead for definition purposes, only the presence or absence of lead. The current OSHA regulations recognize an airborne action level of thirty micrograms of lead per cubic meter of air (30 µg/m³) during an eight-hour day and a permissible exposure level of fifty micrograms per cubic meter (50 µg/m³).

Representative covered components and surfaces were analyzed utilizing a Niton XLp-300A X-Ray Fluorescence (XRF) spectrum analyzer (serial #95004). The suspect painted finishes were selected based on the color of the topcoat and the underlying paint layers and/or the substrate on which it was applied.

Attached in **Appendix IV** is a summary of the paint readings analyzed by the XRF spectrum lead analyzer. The XRF summary provides the sample numbers, sample location, component, substrate, paint color, condition, and results.



3.2 Findings and Results

For the purpose of this assessment, painted surfaces exceeding the SCDHEC disposal limit of 0.7 mg/cm² are considered lead-based paint and are applicable to OSHA regulation. Observed paints consisted of yellow and white pavement stripes and white and green metal beams. Tested surfaces that exceeded the 0.7 mg/cm² threshold include:

- Green structural steel (6.6-7.6 mg/cm²)

The summary of the XRF readings is provided in **Appendix IV**.

4.0 Conclusions and Recommendations

The asbestos and lead-based paint assessment conducted of the I-77 North Bound Bridge over US Highway 21 (Structure No. 401007712200) in Blythewood, South Carolina **did** identify the presence of asbestos-containing materials and the presence of lead-based paint. Our conclusions and recommendations are summarized below:

4.1 Asbestos

S&ME recommends proper removal and disposal of the ACM by a licensed asbestos abatement contractor prior to activities that may disturb an ACM. State and Federal regulations should be carefully considered in order to verify compliance before any actions are initiated that may disturb an ACM. If additional suspect ACMs not included in this report are discovered and will be disturbed by renovation or demolition activities, bulk samples must be collected by a licensed asbestos inspector and analyzed for asbestos content, prior to disturbance of the suspect material(s).

Asbestos removal requires written notification to SCDHEC, specific removal procedures, proper transportation, and disposal per state and federal regulations. The identification and proper removal of ACM prior to demolition or renovation will aid in the prevention of occupational exposures and/or environmental releases of airborne asbestos. If ACMs are managed in place, OSHA requirements apply to employees that may contact or disturb ACMs, including maintenance and custodial workers.

If additional suspect ACMs not addressed in this report are discovered during repair activities, bulk samples should be collected by a SCDHEC licensed inspector and analyzed for asbestos content prior to disturbance or disposal of the suspect materials. This report should also be provided to the contractor(s) to assist with compliance with applicable State and Federal regulations.

4.2 Lead-Based Paint

The lead-based paint assessment of the subject bridge **did identify** the presence of lead-based paint on the green structural steel (6.6-7.6 mg/cm²).

Destructive actions to paint containing detectable levels of lead (*e.g.* paint preparation, component removal, demolition, sanding, grinding, burning, etc.) may require the contractor to comply with the standards of the OSHA regulations 29 CFR 1926.62 (Lead in Construction), including but not limited to training, initial exposure



monitoring, the use of personal protective equipment, and medical surveillance. The determination of OSHA applicability is the responsibility of the contractor and dependent upon the paint condition and the planned treatment of the finishes.

The client is advised that OSHA does not recognize a threshold level of lead for definition purposes, only the presence or absence of lead. Consequently, the OSHA regulations governing worker protection for lead-based paint may apply to work practices including the disturbance of paint systems with detectable levels of lead. Destructive actions (sanding, burning, demolition, component removal, paint preparation) to the lead-containing paint surfaces will require the contractor comply with the standards of OSHA, including but not limited to initial exposure monitoring, the use of personal protective equipment, and medical surveillance.

SCDHEC Regulation 61-107.19 permits demolition materials painted with lead-based paint ($\geq 0.7 \text{ mg/cm}^2$) to be disposed in a permitted Class Two (C&D) or Class Three Subtitle D, Municipal Solid Waste (MSW) landfill.

Accumulations of paint waste (chips, dust, or flakes) must be tested by the Toxicity Characteristic Leaching Procedure (TCLP) to determine if the waste is classified as hazardous, which requires disposal in a Subtitle C (hazardous waste) landfill. Lead waste, at a minimum, must be disposed in a Class Two or Three landfill. No tested coatings exceeded the SCDHEC 0.7 mg/cm^2 limit for lead-based paint. No further recommendations are provided.

5.0 Limitations

This report is provided for the sole use of RS&H, Inc. and the SCDOT. Use of this report by any other parties will be at such party's sole risk, and S&ME disclaims liability for any such use or reliance by third parties. The results presented in this report are indicative of conditions only during the time of the sampling period and of the specific areas referenced. Under no circumstances is this report to be used as a bidding document, or as a project design or specification.

S&ME performed the services in accordance with generally accepted practices of reputable environmental consultants undertaking similar studies at the same time and in the same geographical area. S&ME has endeavored to meet this standard of care. No other warranty, expressed or implied, is intended or made with respect to this report or S&ME's services. Users of this report should consider the scope and limitations related to these services when developing opinions as to risks associated with the site. Additional limitations to our survey are as follows:

- Significant destructive sampling was not performed during the asbestos survey. Additional suspect ACMs may be present in inaccessible locations such as materials encased in concrete. Consequently, if additional suspect materials are discovered during future renovation or demolition activities, bulk samples must be collected and analyzed for asbestos content.
- The subject structure is an active interstate highway and over an active US Highway. Not all portions of the underside of the bridge could be observed or reached by the inspectors.

Appendices

Appendix I – Summary of Asbestos Sampling

Summary of Asbestos Sampling

Project Name: I-77 North Over US HWY. 21 (Structure No. 401007712200)	Project Number: 23610178A
Location: Blythewood, South Carolina	Sampling Date(s): December 1, 2023

Table I-I Summary of Asbestos Sampling

Sample No.	Sample Location	Material	Approx. Quantity ¹	Asbestos Type	% ²	Condition	P.F.D. ³
RM-1	Top of Bridge	Reflector Mastic	50 SF	NAD	NA	Good	NA
RM-2	Top of Bridge	Reflector Mastic		NAD	NA	Good	NA
⁴ RM-3	Top of Bridge	Reflector Mastic		NAD	NA	Good	NA
EJ-1	Top of Bridge	Tan expansion joint	200 LF	NAD	NA	Good	NA
EJ-2	Top of Bridge	Tan expansion joint		NAD	NA	Good	NA
⁴ EJ-3	Top of Bridge	Tan expansion joint		NAD	NA	Good	NA
CT-1	Sides	Concrete surface texture	2,000 SF	Chrysotile	2%	Good	PD
CT-2	Sides	Concrete surface texture		Chrysotile	2%	Good	PD
CT-3	Sides	Concrete surface texture		Chrysotile	2%	Good	PD
CT-4	Sides	Concrete surface texture		Chrysotile	2%	Good	PD
CT-5	Sides	Concrete surface texture		Chrysotile	2%	Good	PD

SF = square feet NAD = No Asbestos Detected NA = Not Applicable PD = Potential for Disturbance

Note 1: Estimated quantities. The quantities should not be used for bidding purposes, as field conditions should be verified.

Note 2: The EPA, SCDHEC and OSHA define a material as asbestos-containing if an asbestos content greater than one percent (> 1%) is detected in a representative sample.

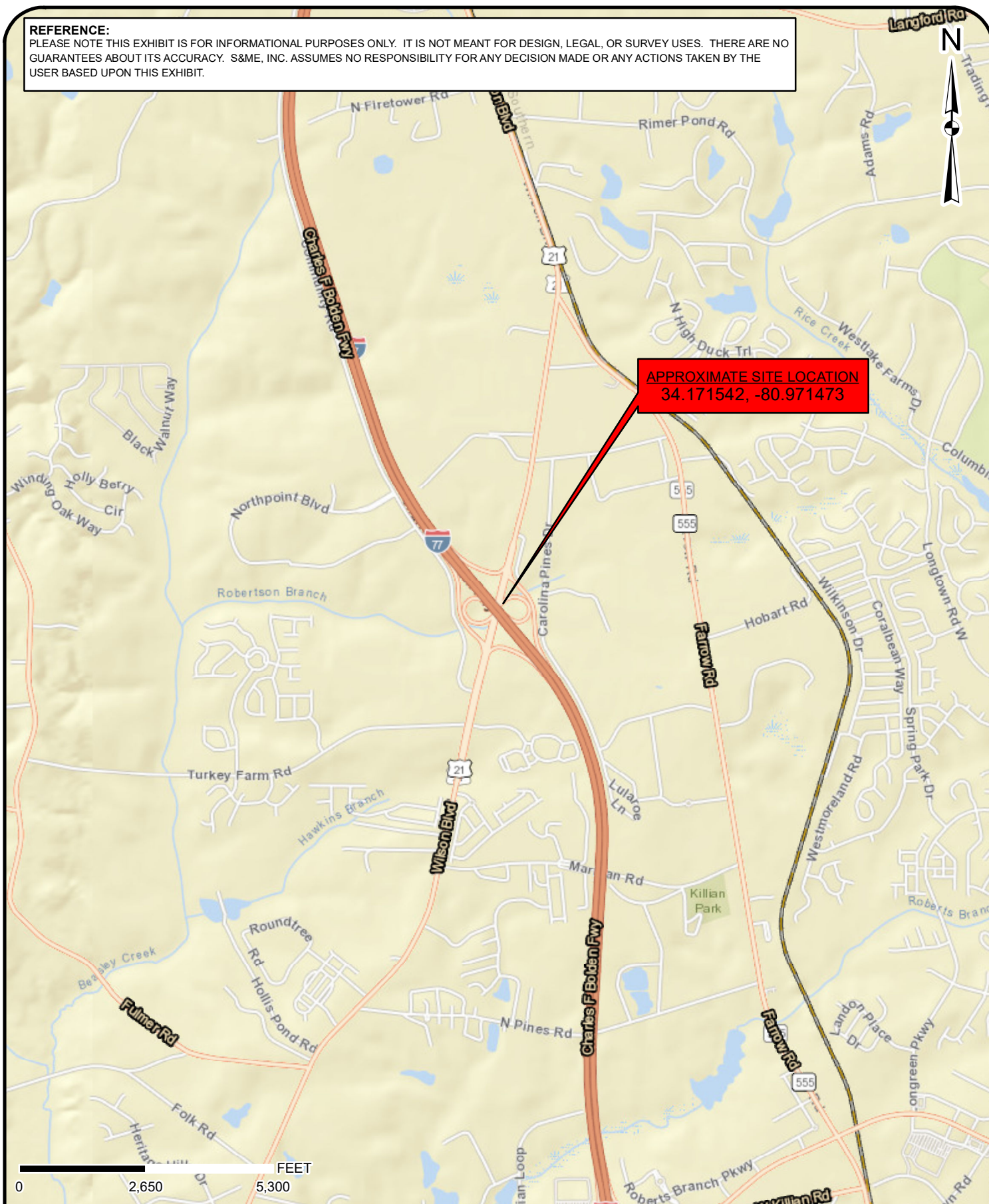
Note 3: Potential for disturbance.

Note 4: Sample analyzed by Transmission Electron Microscopy

Appendix II – Exhibit and Photographs

REFERENCE:

PLEASE NOTE THIS EXHIBIT IS FOR INFORMATIONAL PURPOSES ONLY. IT IS NOT MEANT FOR DESIGN, LEGAL, OR SURVEY USES. THERE ARE NO GUARANTEES ABOUT ITS ACCURACY. S&ME, INC. ASSUMES NO RESPONSIBILITY FOR ANY DECISION MADE OR ANY ACTIONS TAKEN BY THE USER BASED UPON THIS EXHIBIT.



Site Vicinity Exhibit
I-77 North Bound Bridge over US Highway 21

Richland County, South Carolina
Source: World Imagery

SCALE:
1" = 1 miles
DATE:
12-12-23
PROJECT NUMBER
23610178A

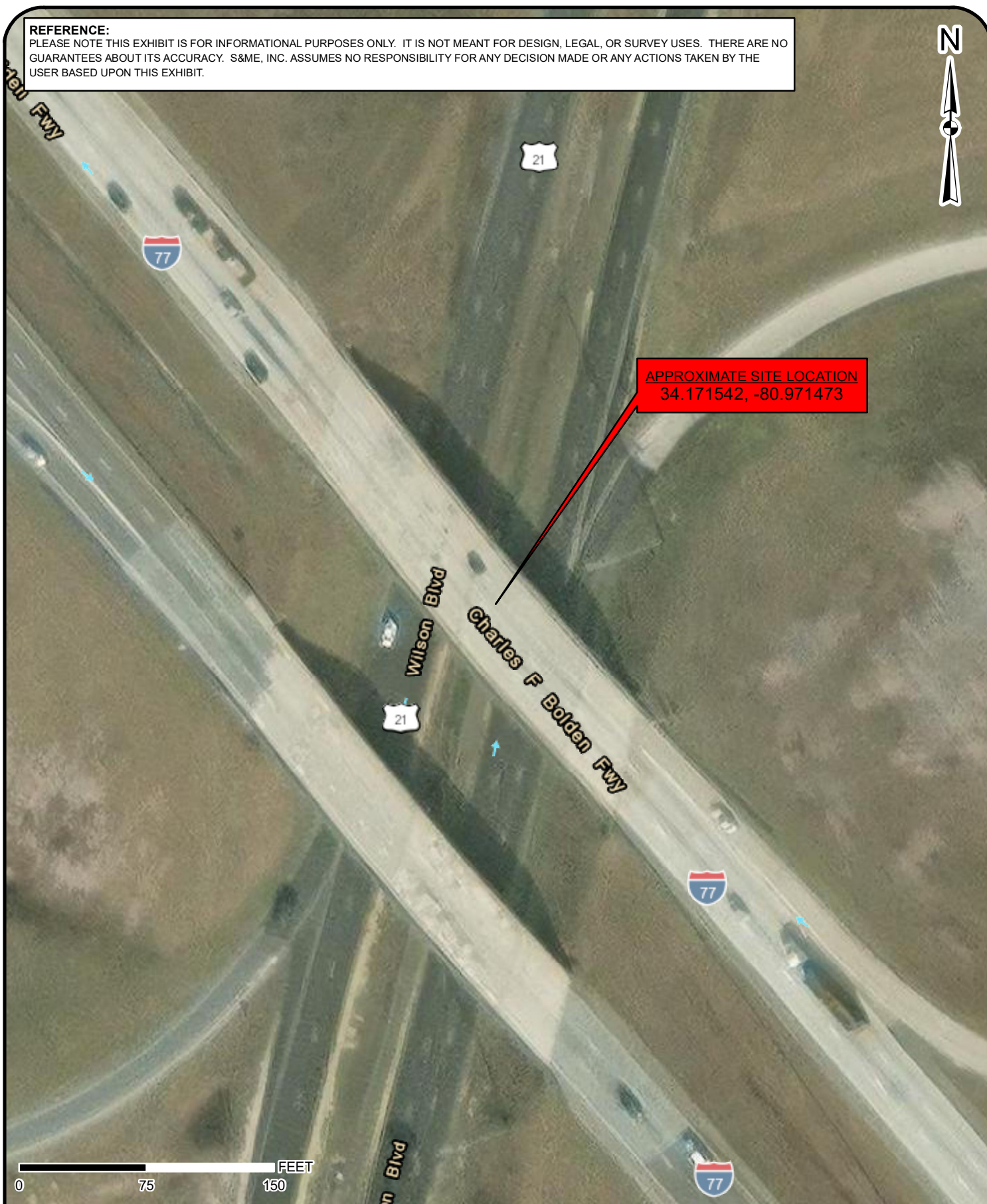
EXHIBIT NO.

1

Drawing Path: T:\Columbia-1610\Projects\2023\23610178A_RS&H_I-77 Exit 26 Phase 1\NTP_Blythewood SC\ENW\Project Docs\Reports\Phase 472A Asbestos & LBP\I-77 over 21\North Bound\Site Aerial Exhibit.mxd plotted by TKnight 12-12-2023

REFERENCE:

PLEASE NOTE THIS EXHIBIT IS FOR INFORMATIONAL PURPOSES ONLY. IT IS NOT MEANT FOR DESIGN, LEGAL, OR SURVEY USES. THERE ARE NO GUARANTEES ABOUT ITS ACCURACY. S&ME, INC. ASSUMES NO RESPONSIBILITY FOR ANY DECISION MADE OR ANY ACTIONS TAKEN BY THE USER BASED UPON THIS EXHIBIT.



APPROXIMATE SITE LOCATION
34.171542, -80.971473



Site Aerial Exhibit

I-77 North Bound Bridge US Highway 21

Richland County, South Carolina

Source: World Imagery

SCALE:
1" = 75 feet

DATE:
12-12-23
PROJECT NUMBER
23610178A

EXHIBIT NO.

2



1 General view of bridge.



2 Structure number. **The concrete surfacing texture tested positive for asbestos (2% Chrysotile).**



3 View beneath the bridge. **The green structural steel tested positive for lead-based paint (6.6-7.6 mg/cm²).**



4 Additional view of the bridge.



Appendix III – Asbestos Laboratory Report and Chain of Custody Record

December 7, 2023

S&ME
134 Suber Road
Columbia, SC 29210

CLIENT PROJECT: Scout I-77 Northbound, 23610178A
CEI LAB CODE: B2325056

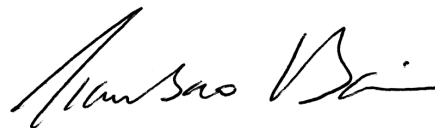
Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on December 4, 2023. The samples were analyzed for asbestos using polarizing light microscopy (PLM) per the EPA 600 Method.

Sample results containing >1% asbestos are considered asbestos-containing materials (ACMs) per EPA regulatory requirements. The detection limit for the EPA 600 Method is <1% asbestos by weight as determined by visual estimation.

Thank you for your business and we look forward to continuing good relations.

Kind Regards,



Tianbao Bai, Ph.D., CIH
Laboratory Director

ASBESTOS ANALYTICAL REPORT

By: Polarized Light Microscopy

Prepared for

S&ME

CLIENT PROJECT: Scout I-77 Northbound, 23610178A

LAB CODE: B2325056

TEST METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 12/07/23

TOTAL SAMPLES ANALYZED: 9

SAMPLES >1% ASBESTOS: 5



CEI

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Scout I-77 Northbound, 23610178A

LAB CODE: B2325056

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
RM-1		B2325056.01	Black	Reflector Mastic	None Detected
RM-2		B2325056.02	Black	Reflector Mastic	None Detected
RM-3		B2325056.03		Sample Submitted for TEM Analysis	
EJ-1		B2325056.04	Black	Expansion Joint	None Detected
EJ-2		B2325056.05	Black	Expansion Joint	None Detected
EJ-3		B2325056.06		Sample Submitted for TEM Analysis	
CT-1		B2325056.07	Gray	Concrete Surface Texture	Chrysotile 2%
CT-2		B2325056.08	Gray	Concrete Surface Texture	Chrysotile 2%
CT-3		B2325056.09	Gray	Concrete Surface Texture	Chrysotile 2%
CT-4		B2325056.10	Gray	Concrete Surface Texture	Chrysotile 2%
CT-5		B2325056.11	Gray	Concrete Surface Texture	Chrysotile 2%

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: S&ME
134 Suber Road
Columbia, SC 29210

Lab Code: B2325056
Date Received: 12-04-23
Date Analyzed: 12-06-23
Date Reported: 12-07-23

Project: Scout I-77 Northbound, 23610178A

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
RM-1 B2325056.01	Reflector Mastic	Homogeneous Black Non-fibrous Bound		100% Mastic	None Detected
RM-2 B2325056.02	Reflector Mastic	Homogeneous Black Non-fibrous Bound		100% Mastic	None Detected
RM-3 B2325056.03	Sample Submitted for TEM Analysis				
EJ-1 B2325056.04	Expansion Joint	Homogeneous Black Non-fibrous Bound		100% Caulk	None Detected
EJ-2 B2325056.05	Expansion Joint	Homogeneous Black Non-fibrous Bound		100% Caulk	None Detected
EJ-3 B2325056.06	Sample Submitted for TEM Analysis				
CT-1 B2325056.07	Concrete Surface Texture	Homogeneous Gray Fibrous Bound	73% 10% 15%	Binder Perlite Calc Carb	2% Chrysotile
CT-2 B2325056.08	Concrete Surface Texture	Homogeneous Gray Fibrous Bound	73% 10% 15%	Binder Perlite Calc Carb	2% Chrysotile

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: S&ME
134 Suber Road
Columbia, SC 29210

Lab Code: B2325056
Date Received: 12-04-23
Date Analyzed: 12-06-23
Date Reported: 12-07-23

Project: Scout I-77 Northbound, 23610178A

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
CT-3 B2325056.09	Concrete Surface Texture	Homogeneous		73% Binder	2% Chrysotile
		Gray		10% Perlite	
		Fibrous		15% Calc Carb	
		Bound			
CT-4 B2325056.10	Concrete Surface Texture	Homogeneous		73% Binder	2% Chrysotile
		Gray		10% Perlite	
		Fibrous		15% Calc Carb	
		Bound			
CT-5 B2325056.11	Concrete Surface Texture	Homogeneous		73% Binder	2% Chrysotile
		Gray		10% Perlite	
		Fibrous		15% Calc Carb	
		Bound			

LEGEND: Non-Anth = Non-Asbestiform Anthophyllite
 Non-Trem = Non-Asbestiform Tremolite
 Calc Carb = Calcium Carbonate

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORTING LIMIT: <1% by visual estimation

REPORTING LIMIT FOR POINT COUNTS: 0.25% by 400 Points or 0.1% by 1,000 Points

REGULATORY LIMIT: >1% by weight

Due to the limitations of the EPA 600 method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarized light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation. *Estimated measurement of uncertainty is available on request.*

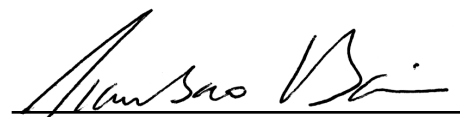
This report relates only to the samples tested or analyzed and may not be reproduced, except in full, without written approval by Eurofins CEI. Eurofins CEI makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results. Interpretation of the analytical results is the sole responsibility of the client. Samples were received in acceptable condition unless otherwise noted. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.

Information provided by customer includes customer sample ID and sample description.

ANALYST:


 Greg Ruff

APPROVED BY:


 Tianbao Bai, Ph.D., CIH
 Laboratory Director



December 12, 2023

S&ME
134 Suber Road
Columbia, SC 29210

CLIENT PROJECT: Scout I-77 Northbound, 23610178A
LAB CODE: T232459

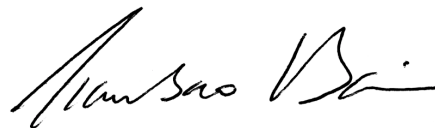
Dear Customer:

Enclosed are asbestos analysis results for TEM bulk samples received at our laboratory on December 7, 2023. The samples were analyzed for asbestos using transmission electron microscopy (TEM) per Chatfield/EPA 600/R-93/116 Sec. 2.5.5.1 method.

Sample results containing > 1% asbestos are considered asbestos-containing materials (ACMs) per the EPA regulatory requirements. The detection limit for the TEM Chatfield/EPA 600/R-93/116 Sec. 2.5.5.1 method is <1% depending on the processed weight and constituents of the sample.

Thank you for your business and we look forward to continuing good relations.

Kind Regards,



Tianbao Bai, Ph.D., CIH
Laboratory Director

ASBESTOS ANALYTICAL REPORT

By: Transmission Electron Microscopy

Prepared for

S&ME

CLIENT PROJECT: Scout I-77 Northbound, 23610178A

LAB CODE: T232459

TEST METHOD: Bulk Chatfield
EPA 600 / R93 / 116 Sec. 2.5.5.1

REPORT DATE: 12/12/23

ASBESTOS BULK ANALYSIS

By: TRANSMISSION ELECTRON MICROSCOPY

Client: S&ME
134 Suber Road
Columbia, SC 29210

Lab Code: T232459
Date Received: 12-07-23
Date Analyzed: 12-12-23
Date Reported: 12-12-23

Project: Scout I-77 Northbound, 23610178A

TEM BULK CHATFIELD / EPA 600 / R93 / 116 Sec. 2.5.5.1

Client ID Lab ID	Material Description	Sample Weight (g)	Organic Material %	Acid Soluble Material %	Acid Insoluble Material %	Asbestos %
RM-3 T68147	Black Reflector Mastic	0.608	28.6	68.9	2.5	None Detected
EJ-3 T68148	Black Expansion Joint	0.282	74.5	18.8	6.7	None Detected

LEGEND: None

METHOD: CHATFIELD & EPA/600/R-93/116 Sec. 2.5.5.1

LIMIT OF DETECTION: Varies with the weight and constituents of the sample (<1%)

REGULATORY LIMIT: >1% by weight

This report relates only to the samples tested or analyzed and may not be reproduced, except in full, without written approval by Eurofins CEI (ECEI). ECEI makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results. Interpretation of the analytical results is the sole responsibility of the client. *Estimated measurement of uncertainty is available on request and in compliance with regulatory requirements.* Samples were received in acceptable condition unless otherwise noted.

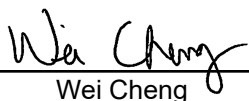
Information provided by customer includes customer sample ID, location, volume and area as well as date and time of sampling.

ECEI recommends between 0.20 and 0.50 grams of sample material for TEM bulk analysis.

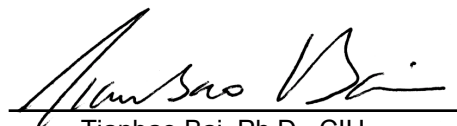
Any weight below 0.10 grams is considered below protocol guidelines.

***Indicates sample weight below 0.05 grams and is considered insufficient for quantitative analysis.*

ANALYST:


Wei Cheng

APPROVED BY:


Tianbao Bai, Ph.D., CIH
Laboratory Director



CEI

CHAIN OF CUSTODY

730 SE Maynard Road, Cary, NC 27511
Tel: 866-481-1412; Fax: 919-481-1442

LAB USE ONLY:

CEI Lab Code:

B2325056/T232459

CEI Lab I.D. Range:

COMPANY INFORMATION		PROJECT INFORMATION
CEI CLIENT #:		Job Contact: Travis Knight
Company: S&ME		Email / Tel: TKnight@smemc.com 803-464-4806
Address: 134 Suber Road Columbia, SC 29210		Project Name: Scout 177 Northbound
Email: TKnight@smemc.com		Project ID#: 23610178A
Tel: 803-561-9024 Fax:		PO #:
		STATE SAMPLES COLLECTED IN: SC

or 803-464-4806

IF TAT IS NOT MARKED STANDARD 3 DAY TAT APPLIES.

ASBESTOS	METHOD	TURN AROUND TIME					
		4 HR	8 HR	1 DAY	2 DAY	3 DAY	5 DAY
PLM BULK	EPA 600	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PLM POINT COUNT (400)	EPA 600	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLM POINT COUNT (1000)	EPA 600	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLM GRAV w POINT COUNT	EPA 600		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLM BULK	CARB 435		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PCM AIR	NIOSH 7400	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM AIR	EPA AHERA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM AIR	NIOSH 7402	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM AIR (PCME)	ISO 10312	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM AIR	ASTM 6281-15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM BULK	CHATFIELD		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TEM DUST WIPE	ASTM D6480-05 (2010)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM DUST MICROVAC	ASTM D5755-09 (2014)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM SOIL	ASTM D7521-16			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM VERMICULITE	CINCINNATI METHOD			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM QUALITATIVE	IN-HOUSE METHOD		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OTHER:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

REMARKS / SPECIAL INSTRUCTIONS:
NOB = 2 PLM, if both neg 1 TEM.



Accept Samples



Reject Samples

Relinquished By:	Date/Time	Received By:	Date/Time
Deane	12/1/23 1630	BUB	12/4/23 940

Samples will be disposed of 30 days after analysis

7243 1506 8226

Appendix IV – Lead-Based Paint Laboratory Report

XRF LEAD-BASED PAINT READING SUMMARY TABLE

Serial #95004
 PAINT
 Project No.: 23610178A
 Site: I-77 North over US HWY. 21
 Date: December 1, 2023
 Ranges (NEG<INC<POS): Device PCS



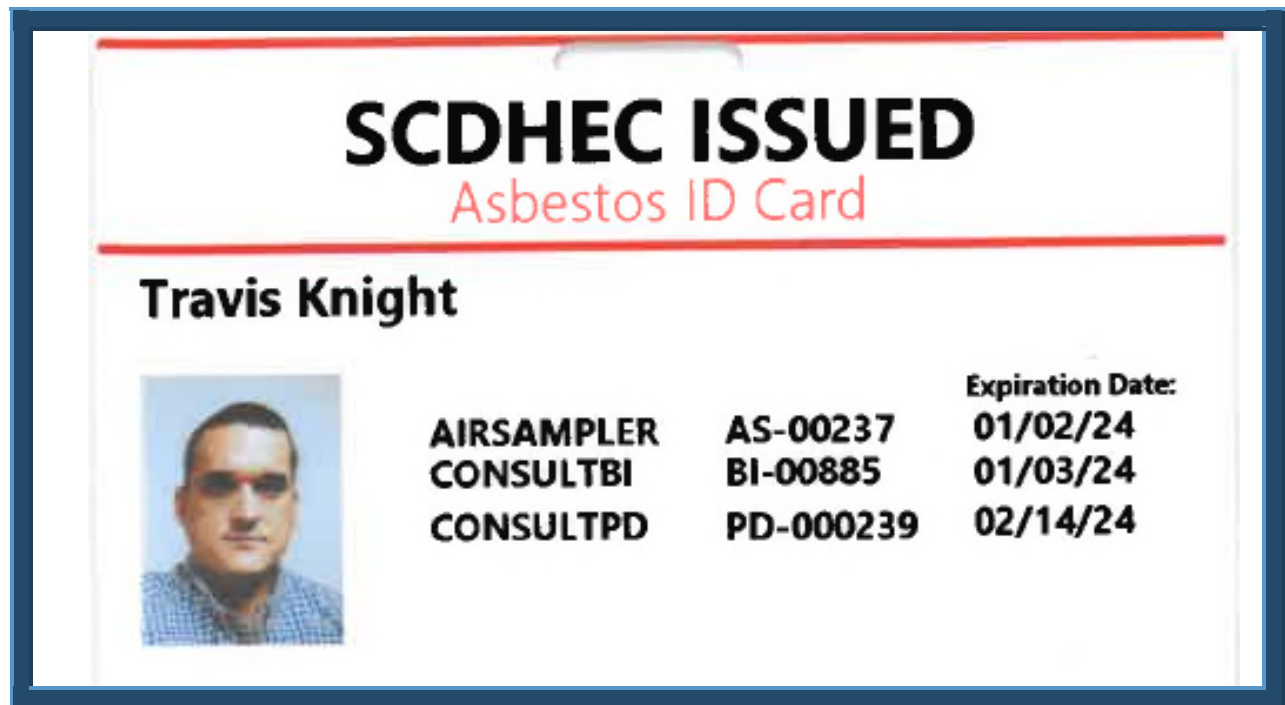
Reading Number	Floor/Area	Room	Feature	Substrate	Condition	Color	Result	XRF Reading (mg/cm²)
1			Shutter					
2			Pre-Calibrate					1.00
3			Pre-Calibrate					1.00
4			Pre-Calibrate					1.00
5	Exterior	Bridge - Underside	I-Beam	Metal	Non-Deteriorated	Green	Positive	7.60
6	Exterior	Bridge - Underside	I-Beam	Metal	Non-Deteriorated	Green	Positive	6.60
7	Exterior	Bridge - Top	Line	Asphalt	Deteriorated	White	Negative	<LOD
8	Exterior	Bridge - Top	Line	Asphalt	Deteriorated	Yellow	Negative	<LOD
9			Post-Calibrate					1.00
10			Post-Calibrate					1.10
11			Post-Calibrate					1.00

Appendix V – Copy of SCDHEC Inspectors' Licenses



South Carolina Department
of
Health and Environmental Control
Asbestos License

Travis Knight





South Carolina Department
of
Health and Environmental Control
Asbestos License

Dayne Tanis

