



July 24, 2015

South Carolina Department of Transportation
955 Park Street, Room 319
Columbia, South Carolina 29201

Attention: Trapp Harris, P.E.
HarrisMD@scdot.org

Reference: Asbestos Assessment Report
Exit 218 Spruill Avenue On and Off-ramp
Structure# 101002600991
North Charleston, South Carolina
S&ME Project No. 1413-15-075

Dear Mr. Harris:

S&ME, Inc. (S&ME) is pleased to provide the enclosed report detailing our asbestos assessment for the referenced on/off-ramp bridge, performed in general accordance with Work Order Number SME#3-18-37345 dated June 5, 2015, and Scope of Services dated May 26, 2015. The report includes the executive summary, project background, assessment procedures, findings and results, and conclusions and recommendations regarding the bridge structure as related to asbestos containing materials.

This report is provided for the use of the South Carolina Department of Transportation and their assignees. 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 and of the specific areas referenced.

We appreciate the opportunity to provide you with our industrial hygiene services. If you have any questions concerning this report, please do not hesitate to call us at (843) 884-0005.

Sincerely,

S&ME, Inc.

Terry W. Richburg
Environmental Location Coordinator

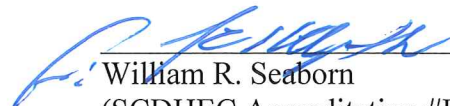
James L. Killingsworth, CHMM
Environmental Area Manager, V.P.

Attachments


ASBESTOS ASSESSMENT REPORT
EXIT 218 SPRUILL AVENUE ON AND OFF-RAMP
STRUCTURE# 101002600991
NORTH CHARLESTON, SOUTH CAROLINA
S&ME Project No. 1413-15-075

Prepared for:
South Carolina Department of Transportation
955 Park Street, Room 319
Columbia, South Carolina 29201
(803) 737-0766

Assessment Performed by:



William R. Seaborn
(SCDHEC Accreditation #BI-01317)



Date

Report Prepared by:



Terry W. Richburg
(SCDHEC Accreditation #MP-00110)



Date



620 Wando Park Boulevard
Mount Pleasant, South Carolina 29464
(843) 884-0005

July 24, 2015

	Yes, Asbestos Was Found
✓	No, Asbestos Was Not Found

TABLE OF CONTENTS

EXECUTIVE SUMMARY 1

2. ASSESSMENT PROCEDURES..... 2

3. FINDINGS AND RESULTS..... 3

4. ABBREVIATIONS AND HAZARD KEY ASSESSMNET 5

5. CONCLUSIONS AND RECOMMENDATIONS 5

APPENDIX II-1

APPENDIX II..... II-1

APPENDIX IIIIII-1

APPENDIX IVIV-1

APPENDIX V..... V-1

EXECUTIVE SUMMARY

An asbestos assessment was conducted on July 9, 10 and 22, 2015, of the Exit 218 Spruill Avenue on and off-ramp located in North Charleston, South Carolina (site location map provided in Appendix I). The purpose of the assessment was to identify asbestos containing materials (ACMs) associated with the structure, prior to demolition activities in order to construct on and off-ramps servicing a planned roadway. The structure is labeled with an identification number (101002600991) assigned by the owner.

The Exit 218 Spruill Avenue on/off-ramp #101002600991 is approximately 1,200 feet long and 20 feet wide. The roadway is comprised of concrete, situated on steel I-beams, on concrete bents. An asphaltic expansion joint material was located between the roadway deck sections, and no other suspect ACMs were observed between bent caps and steel I-beams. Materials associated with the ramp appeared to be homogeneous.

Suspect ACMs observed, sampled and analyzed included the referenced asphaltic expansion joint material. Based on the bulk sampling and analysis performed as part of this assessment, no ACMs were identified. The Environmental Protection Agency (EPA) and Occupational Safety and Health Administration (OSHA) defines a material asbestos containing if an asbestos content greater than one percent (>1%) is detected in a bulk sample.

If additional suspect ACMs are discovered during the planned demolition and disposal activities, bulk samples should be collected by a South Carolina Department of Health and Environmental Control (SCDHEC) licensed inspector and analyzed for asbestos content. An application for demolition, along with a copy of this report, must be submitted to SCDHEC 10 weekdays prior to demolition activities. This report should be provided to the contractor(s) to assist with compliance with applicable State and Federal regulations.

1. BACKGROUND

S&ME was contracted to perform an asbestos assessment of the Exit 218 Spruill Avenue on and off-ramp located in North Charleston, South Carolina. The purpose of the assessment was to identify asbestos containing materials (ACMs) associated with the structure, prior to demolition activities in order to construct on and off-ramps servicing a planned roadway. The structure is labeled with an identification number (101002600991) assigned by the owner.

The Exit 218 Spruill Avenue on/off-ramp is approximately 1,200 feet long and 20 feet wide. The roadway is comprised of concrete, situated on steel I-beams, on concrete bents. An asphaltic expansion joint material was located between the roadway deck sections, and no other suspect ACMs were observed between bent caps and steel I-beams. All materials associated with the ramp appeared to be homogeneous.

The identification of ACMs will aid in the prevention of occupational exposures and/or environmental releases of airborne asbestos during destructive activities. Identification of ACMs also complies with Title 40 Code of the Federal Regulations, part 61, and State regulation 61-86.1 enforced by the South Carolina Department of Health and Environmental Control (SCDHEC), along with Title 29 Code of Federal Regulations, part 1926 enforced by the Occupational Safety and Health Administration (OSHA). The following report describes the assessment procedures used, results of the suspect ACMs sampled and analyzed, and conclusions and recommendations regarding the subject structure as related to ACMs.

2. ASSESSMENT PROCEDURES

The assessment was performed by observing and sampling suspect ACMs. Significant destructive testing was not performed; therefore the possibility exists that additional suspect asbestos-containing materials may be present in inaccessible areas such as concrete or asphalt overlays, and between components. If additional suspect materials are discovered during the planned demolition activities, destructive actions to the suspect ACM should not proceed until bulk samples are collected and analyzed for asbestos content.

A sampling strategy was developed to provide representative samples in accordance with SCDHEC and the Environmental Protection Agency (EPA). Bulk samples were collected from suspect ACMs and recorded on a chain of custody record and submitted to our in-house Polarized Light Microscopy (PLM) laboratory in Charlotte, North Carolina for analysis for asbestos content. Confirmation analysis was performed by Transmission Electron Microscopy (TEM) by EMSL Analytical of Charlotte, North Carolina for non-friable organically bound materials reported negative by PLM. Both laboratories are accredited by the National Voluntary Laboratory Accreditation Program (NVLAP), which is administered by the National Institute of Standards and Technology.

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 present.

Transmission Electron Microscopy (TEM)

Suspect non-friable organically bound materials, exhibiting negative results via PLM analysis, were analyzed by trained microscopists by TEM using EPA 600 Method in accordance with ASTM E2356.

3. FINDINGS AND RESULTS

The asbestos assessment performed of the Exit 218 Spruill Avenue on/off-ramp (101002600991) in July 2015 included the assessment and bulk sampling of suspect ACMs to include asphaltic expansion joint material associated with the concrete roadway decking. Based on the bulk samples collected and analyzed no ACMs were identified. The EPA and OSHA define materials as asbestos containing if an asbestos content >1% is detected in a representative sample.

A location map is provided in Appendix I, and a diagram of the asbestos bulk sample locations is provided in Appendix II. A copy of the inspector's SCDHEC license is provided in Appendix II, and the laboratory analyses and chain-of-custody records are provided in Appendix IV. Photographs of the structure are provided in Appendix VI.

The following summary table (Table 1) exhibits the sample number, location, type of material tested, approximate quantity of the material sampled, condition of the material, and corresponding result for each sample.

TABLE I: SUMMARY OF ASBESTOS BULK SAMPLE ANALYSIS

Polarized Light Microscopy								
Sample Number	Location	Material	² Approx. Quantity	Asbestos Type	¹ Percent	Condition	Potential for Disturbance	Hazard Assessment
OPS-EJ-01	Between bridge decking	Asphaltic expansion joint material	335 LF	ND	NA	NA	NA	NA
OPS-EJ-02				ND	NA	NA	NA	NA
³ OPS-EJ-03				ND	NA	NA	NA	NA

Abbreviations:

ND = No Asbestos Detected
 NA = Not Applicable
 LF = Linear Feet

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

²The quantities are estimated, and should not be used for bidding purposes, as field conditions should be verified.

³Samples analyzed by TEM to confirm negative results reported by PLM analysis.

4. ABBREVIATIONS AND HAZARD KEY ASSESSMNET

In accordance with the EPA and SCDHEC, confirmed ACM is assigned a hazard assessment based on its present condition and potential for disturbance. The hazard assessment is used as a tool for prioritization in remedial actions regarding ACM(s). The following key exhibits the criteria that compose the hazard assessment. No ACMs were identified in the bulk samples collected and analyzed, therefore the hazard assessment key does not apply.

Present Condition

F = Friable

NF = Non-friable

G = Good (Very localized limited damage)

D = Damaged (Damage of less than 10% distributed and less than 25% localized)

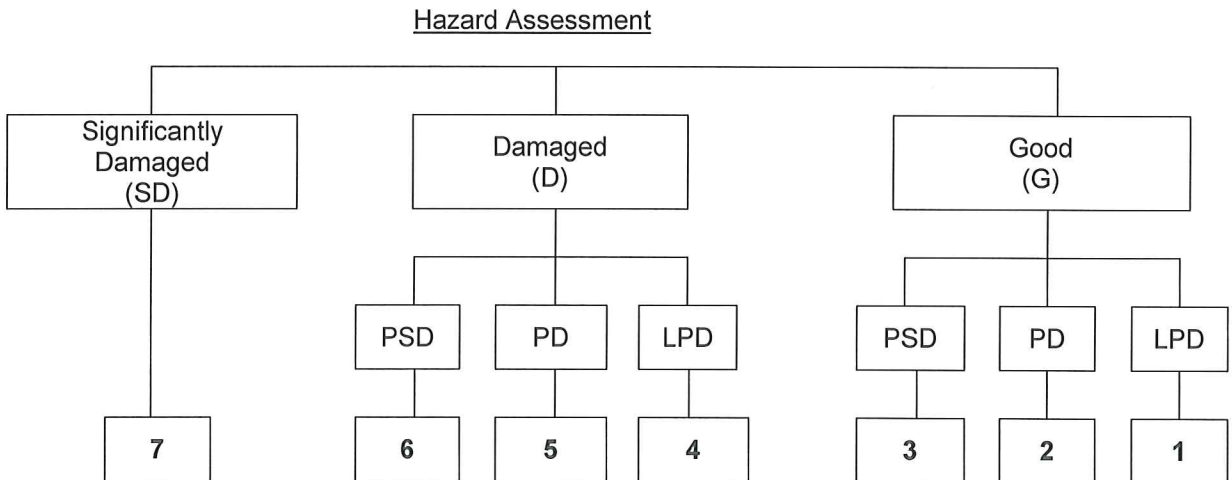
SD = Significantly Damaged (Damage equal to or greater than 10% distributed, 25% localized)

Potential for Future Disturbance

LPD = Low Potential for Disturbance (Contact, Vibration, and Air Erosion all of Low Concern)

PD = Potential for Damage (Contact, Vibration, or Air Erosion of Moderate Concern)

PSD = Potential for Significant Damage (Contact, Vibration, or Air Erosion of High Concern)



5. CONCLUSIONS AND RECOMMENDATIONS

The asbestos assessment conducted in July 2015 of the Exit 218 Spruill Avenue on/off-ramp (101002600991) located in North Charleston, South Carolina, did not identify the presence of ACMs. If additional suspect ACMs are discovered during the planned demolition and disposal activities, bulk samples should be collected by a SCDHEC licensed inspector and analyzed for asbestos content. An application for demolition, along with a copy of this report, must be submitted to SCDHEC 10 weekdays prior to demolition activities. This report should be provided to the contractor(s) to assist with compliance with applicable State and Federal regulations.

APPENDIX I

SITE LOCATION MAP



SCALE:	NTS
APPROVED BY:	TWR
DRAWN BY:	TWR
DATE:	JULY 24, 2015



SITE LOCATION

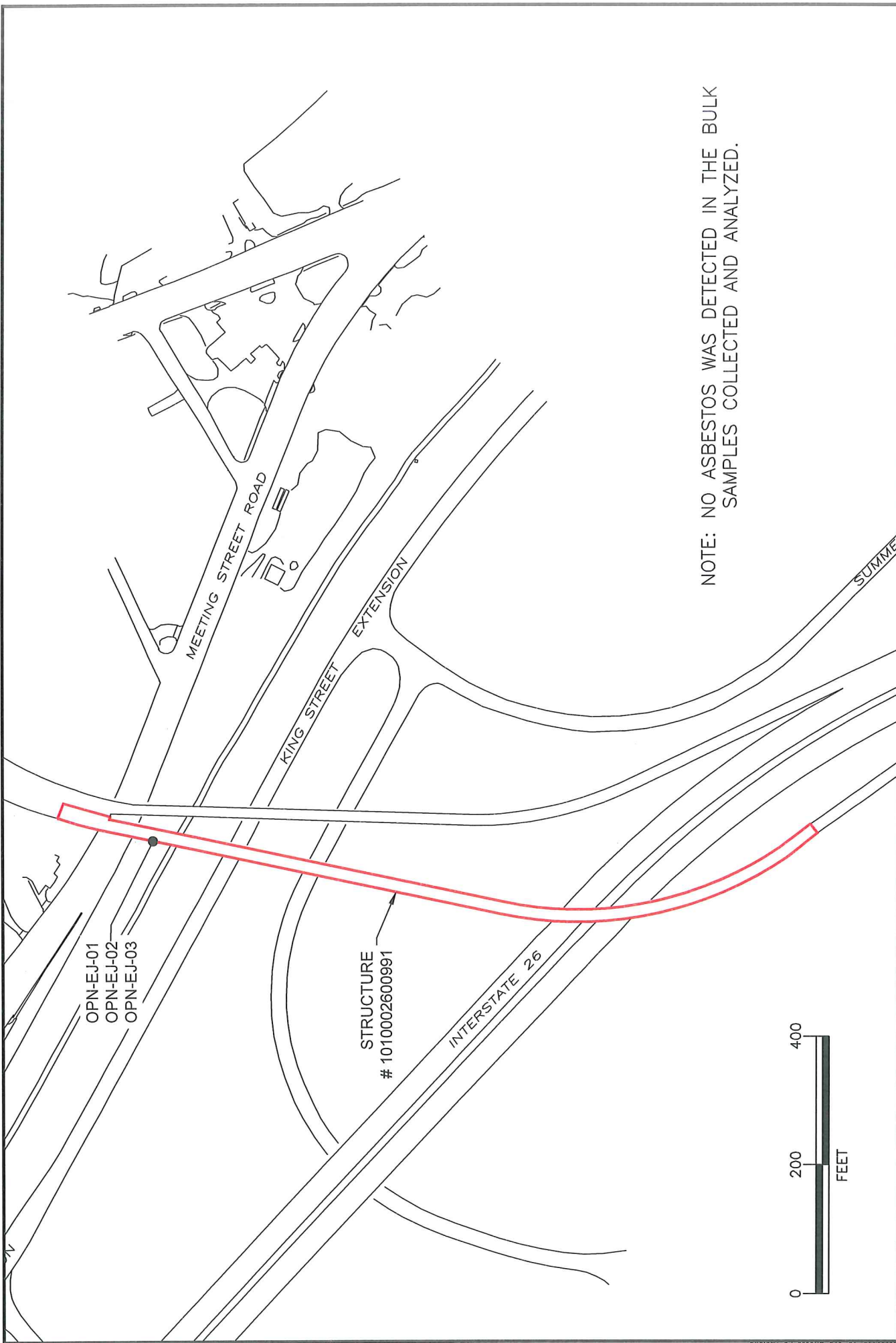
Exit 218 Spruill Avenue On and Off-Ramp
 Structure# 101002600991
 North Charleston, South Carolina
 S&ME Project No. 1413-15-075

FIGURE NO.

1

APPENDIX II

DIAGRAM OF BULK SAMPLE LOCATIONS



NOTE: NO ASBESTOS WAS DETECTED IN THE BULK SAMPLES COLLECTED AND ANALYZED.

SCALE:	AS SHOWN
APPROVED BY:	TR
DRAWN BY:	LAJ
DATE:	7-24-2015
PROJECT NO.	1413-15-075



ASBESTOS ASSESSMENT
EXIT 218 SPRUILL AVENUE ON/OFF RAMP
 STRUCTURE 1010002600991
 NORTH CHARLESTON, SOUTH CAROLINA

FIGURE NO.

1

APPENDIX III

COPY OF INSPECTOR'S SCDHEC LICENSE

SCDHEC ISSUED
Asbestos ID Card

William Seaborn

Expires

AIR SAMPLER
CONSULT BI

AS-00416 02/16/16
BI-01317 02/17/16



APPENDIX IV

LABORATORY ANALYSIS SHEETS AND CHAIN OF CUSTODY RECORDS



9771D Southern Pine Boulevard
 Charlotte, NC 28273
 704-940-1830 Fax 704-565-4929
 NVLAP Lab Code 102075-0

POLARIZED LIGHT MICROSCOPY
 Performed by EPA 600/R-93/116 Method

Asbestos Analysis Summary

Client Name Charleston Branch
Client Job SCDOT Port Access Spvill Ave East Ramp
 620 Wando Park Blvd.
 Mt. Pleasant SC 29464

Date Received 7/13/2015
Date Analyzed 7/16/2015

Job Number 1413-15-075

Lab ID:	Sample #:	Appearance	Comments	Asbestos %/Type	Non-Asbestos Fibrous %/Type	Non-Fibrous %/Type
15-8272	OPS-EJ-01	BLACK NONFIBROUS		ND		100 OTHER
15-8273	OPS-EJ-02	BLACK FIBROUS		ND	1 CELLULOSE	99 OTHER

Analyzed by: Jane Wasilewski
Additional Comments:

Jane Wasilewski
 Laboratory Manager

For heterogeneous samples easily separated into subsamples, and for layered samples, each component is analyzed separately. ND = None Detected (Asbestos: Not Present in Representative Sample), RCF= (Refractory Ceramic Fiber) The results relate only to the items tested. The sample may not be fully representative of the larger material in question. This sheet may not be reproduced except with permission from SME, Inc. This report may not be used to claim product endorsement by NVLAP or any agency of the U.S. Government. Although Polarized Light Microscopy (PLM/Dispersion Staining) (Method EPA 600/R-93/116) is the specified method for analysis of bulk material samples for asbestos under the EPA Asbestos Hazard Emergency Response Act, there have been reports that this method may not identify asbestos when fiber sizes are extremely small or if they are bound in a resinous material. Such materials include floor tile, mastic and asphaltic roofing. Currently, reanalysis by Transmission Electron Microscopy (TEM) to verify results of <1% or "None Detected" for these materials is recommended.



BULK SAMPLE

CHAIN OF CUSTODY RECORD

PROJECT NO. 1413-15-075		PROJECT NAME SCOOT Port Access Rd				RELINQUISHED BY: <i>Wm</i>		DATE 7-10-15		TIME 15:00		RECEIVED BY:	
FACILITY Spruill Ave East Ramp		RELINQUISHED BY:				DATE		TIME		RECEIVED BY:			
SAMPLER(S) S. Reichard / B. Seaborn		DATE TAKEN 7-10-15		RELINQUISHED BY:		DATE		TIME		RECEIVED BY:			
SAMPLE #	HOMOGENEOUS AREA	MATERIAL TYPE	LAB NUMBER	DATE ANALYZED	ANALYSTS INITIALS	ASBESTOS + N/D	ARCHIVE NUMBER	DATE ARCH	ARCHIVER INITIALS	SPECIAL INSTRUCTIONS			
OPS-EJ-01	2		15-8272							PLM			
OPS-EJ-02	↓		73							PLM			
OPS-EJ-03			74							TEM			

ALL SAMPLES WILL BE DISPOSED OF NINETY DAYS AFTER ANALYSIS UNLESS OTHERWISE REQUESTED

MATERIAL TYPES

A - <4" Pipe Fitting
 B - 4-8" Pipe Fitting
 C - 9-14" Pipe Fitting
 D - >14" Pipe Fitting
 E - <4" Pipe
 F - 4-8" Pipe

G - 9-14" Pipe
 H - >14" Pipe
 I - Spray-On/Trowel
 J - Floor Tile
 K - Tanks/Boiler
 L - A.H.U. Insul.

M - A.H.U. Exp. Jt.
 N - Ceiling/Wall Tile
 O - Fiberboard
 P - Other
 (See notes - Front or back)

*PLM TAT 5 days
 TEM TAT 3 days
 Do not run TEM if both PLMS are positive*

S&ME SF1-002 (REV. 5/83) This document was prepared pursuant to a specific agreement to address the unique requirements of an S&ME client. Prior to further use, an S&ME professional should be contacted for a complete explanation of its preparation and contents.



EMSL Analytical, Inc.

376 Crompton Street, Charlotte, NC 28273
Phone/Fax: (704) 525-2205 / (704) 525-2382
<http://www.EMSL.com> charlottelab@emsl.com

EMSL Order: 411504889
CustomerID: SMEI54
CustomerPO: 62503
ProjectID:

Attn: **Jane Wasilewski**
S&ME, Inc.
9771D Southern Pine Blvd.
Charlotte, NC 28273


Phone:
Fax: (704) 565-4929
Received: 07/17/15 12:30 PM
Analysis Date: 7/20/2015
Collected:

Project: 1413-15-075

**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
OPS-EJ-03 411504889-0002	- Exp. Joint	Gray/Black Fibrous Heterogeneous	100	<0.1 Fibrous (other)	No Asbestos Detected

Analyst(s)
Charles Harris (1)


Lee Plumley, 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. Charlotte, NC

Initial report from 07/21/2015 07:54:31



EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody EMSL Order Number (Lab Use Only):

411504889

EMSL ANALYTICAL, INC.
376 CROMPTON ST
CHARLOTTE, NC 28273
PHONE: 704-525-2205
FAX: 704-525-2382

Company : S&ME Inc.		EMSL-Bill to: <input type="checkbox"/> Same <input checked="" type="checkbox"/> Different <small>If Bill to is Different note instructions in Comments**</small>	
Street: 9771D Southern Pine Blvd.		<i>Third Party Billing requires written authorization from third party</i>	
City: Charlotte	State/Province: NC	Zip/Postal Code: 28273	Country:
Report To (Name): Jane Wasilewski		Telephone #: 704-940-1830	
Email Address: jwasilewski@smeinc.com		Fax #:	Purchase Order: 62503
Project Name/Number:		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
U.S. State Samples Taken:		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	

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 4 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 PLM - Bulk (reporting limit) <input 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"/> NIOSH 9002 (<1%)	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 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 CARB 435 - A (0.25% sensitivity) <input type="checkbox"/> PLM CARB 435 - B (0.1% sensitivity) <input type="checkbox"/> TEM CARB 435 - B (0.1% sensitivity) <input type="checkbox"/> TEM CARB 435 - C (0.01% sensitivity) <input type="checkbox"/> TEM Qual. via Filtration Technique <input type="checkbox"/> TEM Qual. via Drop-Mount Technique Other: <input type="checkbox"/>
--	---	---

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

Samplers Name: _____ Samplers Signature: _____

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
OPN-EJ-03	Exp. Joint		
OPS-EJ-03	↓		

Client Sample # (s): _____ Total # of Samples: 4

Relinquished (Client): _____ Date: 7/17/15 Time: _____

Received (Lab): _____ Date: 7/17/15 Time: 1230 pm w/

Comments/Special Instructions: Bill to S&ME, Inc., 9751 Southern Pine Blvd., Charlotte NC 28273
1413-15-075

APPENDIX V
PHOTOGRAPHS




Photo 1	
	Date: 07-09-15
	Photographer: Seaborn
Location/Orientation	ID label on exit ramp
Remarks	

Photo 2	
	Date: 07-24-15
	Photographer: Richburg
Location/Orientation	Photo taken on King Street Extension facing South
Remarks	