

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# 101002600992

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# 101002600992 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

EXI	ECUTIVE SUMMARY	1
2.	ASSESSMENT PROCEDURES	2
3.	FINDINGS AND RESULTS	3
4.	ABBREVIATIONS AND HAZARD KEY ASSESSMNET	5
5.	CONCLUSIONS AND RECOMMENDATIONS	5
API	PENDIX I	I-1
API	PENDIX II	. II-1
APF	PENDIX III	TTT-1
	PENDIX IV	
	PENDIX V	

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 (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 assigned by the owner (101002600992).

The Exit 218 Spruill Avenue on/off-ramp #101002600992 is approximately 700 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. <u>Based on the bulk sampling and analysis performed as part of this assessment, no ACMs were identified.</u> 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 assigned by the owner (101002600992).

The Exit 218 Spruill Avenue on/off-ramp is approximately 700 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.

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 (101002600992) 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

		Polari	Polarized Light Microscopy	icroscopy				
Sample Number	Location	Material	² Approx. Quantity	² Approx. Asbestos Quantity Type	¹ Percent	¹ Percent Condition	Potential for Disturbance	Hazard Assessment
OPS-EJ2-01				ND	AN	NA	NA	NA
OPS-EJ2-02	Between bridge decking	Asphaltic expansion joint material	200 LF	QN	NA	NA	NA	NA
30PS-EJ2-03				QN	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)

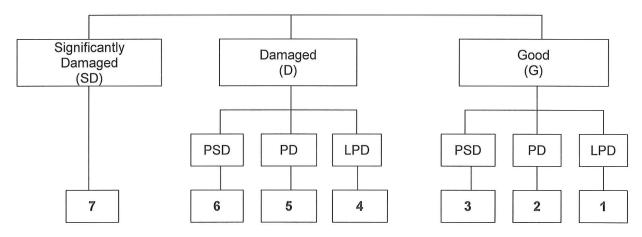
Potential for Future Disturbance

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)

Hazard Assessment

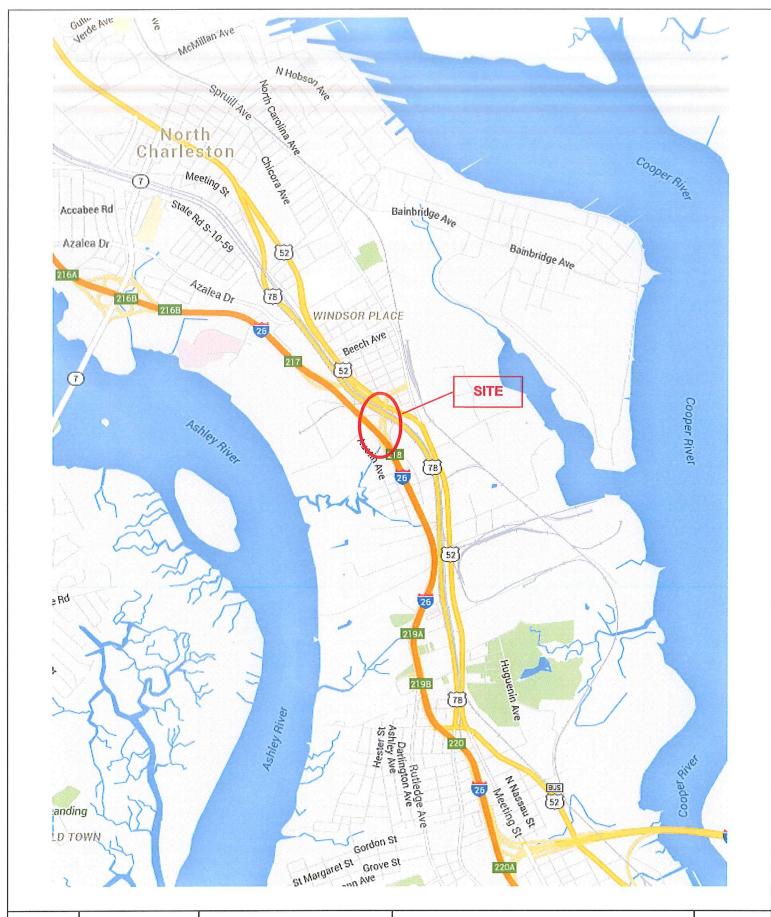


5. CONCLUSIONS AND RECOMMENDATIONS

The asbestos assessment conducted in July 2015 of the Exit 218 Spruill Avenue on/off-ramp (101002600992) 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



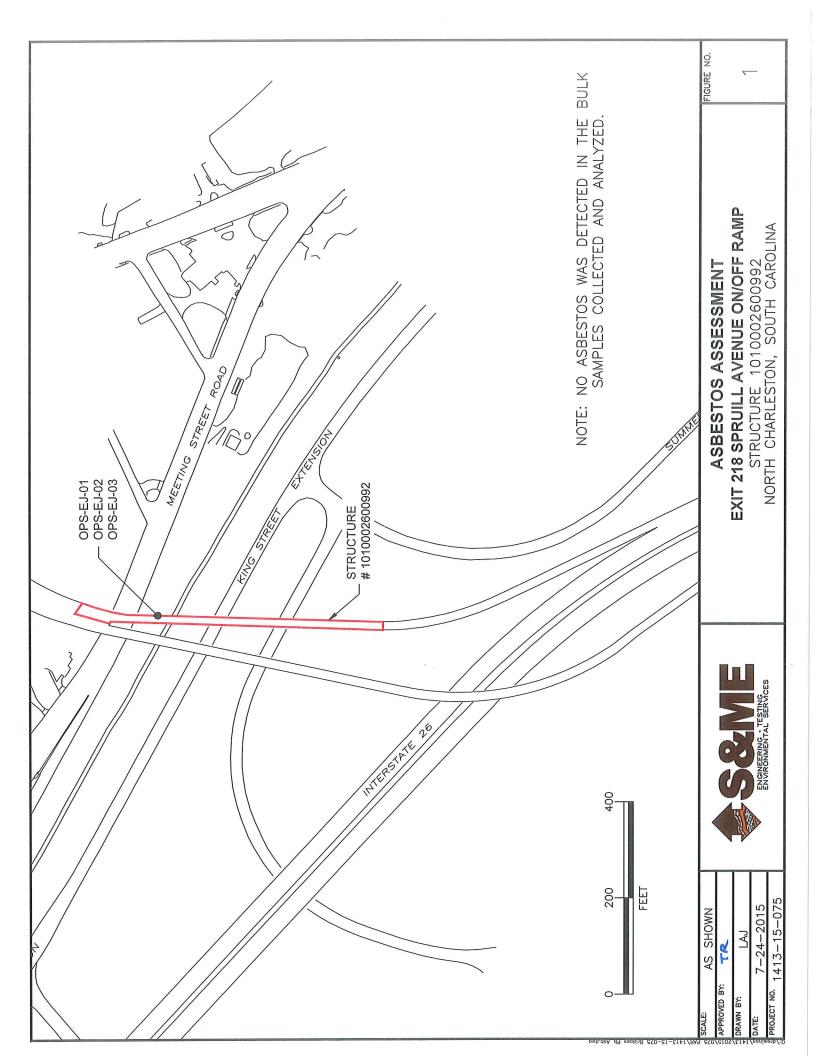
SITE LOCATION

Exit 218 Spruill Avenue On and Off-Ramp Structure# 101002600992 North Charleston, South Carolina S&ME Project No. 1413-15-075 FIGURE NO.

1

APPENDIX II

DIAGRAM OF BULK SAMPLE LOCATIONS



APPENDIX III

COPY OF INSPECTOR'S SCDHEC LICENSE

SCDHEC ISSUED Asbestos ID Card

William Seaborn

Expires



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

APPENDIX IV

LABORATORY ANALYSIS SHEETS AND CHAIN OF CUSTODY RECORDS



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:

411504992

CustomerID: CustomerPO: SMEI51 39450

ProjectID:

Bill Seaborn

S&ME, Inc. 620 Wando Park Boulevard Phone:

(843) 884-0005

Fax:

(843) 881-6149

Received: Analysis Date: 07/23/15 8:00 AM 7/23/2015

Collected:

7/22/2015

Mount Pleasant, SC 29464

Project: SCDOT Port Access Rd./ 1413-15-075

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

Non-Asbestos

<u>Asbestos</u>

Sample	Description	Appearance	%	Fibrous	% Non-Fibrous	% Type
OPS-EJ2-01 411504992-0002	Spruill Ave. West Ramp - Expansion Joint	Black Fibrous Homogeneous	10%	6 Cellulose	90% Non-fibrous (other)	None Detected
OPS-EJ2-02	Spruill Ave. West	Black	10%	6 Cellulose	90% Non-fibrous (other)	None Detected
411504992-0003	Ramp - Expansion Joint	Fibrous Homogeneous				

Analyst(s)

Erin Guzowski (1) Kristie Elliott (1)

Lee Plumley, Laboratory Manager or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no EMSL maintains liability limited to cost of analysis. Inis report relates only to the samples reported 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. 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. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1% Samples analyzed by EMSL Analytical, Inc. Charlotte, NC NVLAP Lab Code 200841-0, VA 3333 00312

Initial report from 07/23/2015 11:38:05

St. Fr.
1.00
70,30
1 min 122 17 17 17 18 1
Address of the same

Asbestos Lab Services Chain of Custody EMSL Order Number (Cate Use Cody):

Glangele (p. 176 Emografister) En aksis (186 72)

POPPE BENEFIT OF THE PARTY OF T		411504792			21年4年 47年 47年 47年 47年 47年 47年 47年 47年 47年	
Company: S&ME, Inc.			į.	MSL-Bill to: O Same C Ditte to h Different pale betweening in Con-	and the second s	
Street: 620 Wendo Park Blvd			n tak Thirs(LP nely EV	de la Dillocest pole leascociuse le Con Nisg seguisea voluten authorizatio	umants'' A from third party	
City/State/Zip: Ml. Pleasant, 6	C 29464		10000		Salara Sa	
Report To (Name); Teny Richt	ANQ	Fax:				
Tulephone: 643-864-0035	S IF TO A		ss: (richbungg)sr			
Project Name/Number: 141	Purchase Onter:		010026			
Please Provide Results;	Control of the Contro		mp'es Yaken: Si	The same of the sa		
[]3 Hour [X 6)		rnaround Time (TAT) Options* -		96 Hour 1 1 Wee	ek [[] 2 Week	
For TEM Air 3 for through	A br. clease cell shead to:	chadula. There is a promium charge for is completed in acconsance with EMSL's	3 Hone TELLAR	GERA OF ERA LINELITAT	Von will be poled to end	
PCM - Air Check if		TEM - Air 4-4.5hr TAT (A		TEM- Dust		
() NIOSH 7400		☐ AHERA 40 CFR, Part 763		Microvac - ASTA	4 D 5755	
W OSHA 8hr, TWA	. A	☐ NIOSH 7402		☐ Wipe - ASTM DE		
PLM - Bulk (reporting	Copyright Production Copyright Copyr	T EPA Level II			n (EPA 600/J-93/167)	
N PLM EPA 600/R-93	C. CONTRACTOR OF THE PARTY OF T			The second secon	And the second s	
				Soil/RockiVermicu	manuscript 4	
PLM EPA NOB (<19	(3)	TEM - Bulk		A COLUMN TO THE PARTY OF THE PA	- A (0.25% sonsitivity)	
Point Count	na i n ker	☑ TEM EPA NOB	1 m 10	A F	· B (0,1% sensitivity)	
[] 400 (<0.25%)[] 10	The state of the s	NYS NOB 198.4 (non-friable	a-NY)		B (0.1% sensitivity)	
Point Count wiGravime		☐ Chatfield SOP		I consider	- C (0.01% sensitivity)	
□ 400 (<0.25%)□ 10(☐ TEM Mass Analysis-EPA 80	10 sec. 2.5	EPA Protocol (Se	unii-Quaniitativa)	
NYS 198.1 (hiable i		TEM - Water: EPA 100.2		[] EPA Protocol (Ou	zantitativa)	
[] NYS 198.6 NO3 (no	n-Inablo-NY)	Fibers > 10um Wasto	Drinking	Olher:		
(NIOSH 9002 (<1%)		All Fiber Sizès 🔲 Waste 🔲	Drinking			
Check For Positive	Stop - Clearly Identi	ly Homogenous Group Filter	Pore Slze (A	\Ir Samples); ☐ 0.8	lpm 🔲 0.45pm	
Samplers Name:		Samplers	Signature:			
Sample #		Sample Description		Volume/Area (Air) HA # (Bulk)	Date/Time Sampled	
OPS-EJ2-01	Expansion	Joint-Sprill A	ve-	PLM	7-22-15	
OPS-E52-02				PLM	7-22-15	
CPS-EJ2-03	V	<u> </u>		TEM	7-22-15	
				40 11/10 11/10		
Client Sample # (s): Relinquished (Client):	-7 -3			otal# of Samples:		
venidaising (cliqui);	J. 456	Date: 7/322//	3	Time:	11:30	
Received (Lab):	Kyl Nbsc	Date: 7/23/r	5	Time:	10.05An F/	
emmonts/Special Instructions: Run all 50%	poles concu	wently, Email	to . t	richburge.	5 me 145, Com	
Contrated Farmanace . Act asked 1st Camicas El	SE ALB UPPSTON				4	



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:

411504992

CustomerID: CustomerPO: SMEI51 39450

ProjectID:

Bill Seaborn S&ME, Inc.

620 Wando Park Boulevard

Phone:

(843) 884-0005

Fax: Received: (843) 881-6149 07/23/15 8:00 AM

Analysis Date:

7/23/2015

Collected:

7/22/2015

Mount Pleasant, SC 29464

Project: SCDOT Port Access Rd./ 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-EJ2-03	Spruill Ave. West Ramp -	Black	100	None	No Asbestos Detected
411504992-0004	Expansion Joint	Fibrous			
		Heterogeneous			

Analyst(s)

Kristie Elliott (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 07/23/2015 16:12:55

OrderID: 411504992

	180c	
Y 11916	mornione	

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

Chalcite 10" "TO Coregon Steen Chalcite 190 ACT 1 PHTTY 4004 ACT 2004

Y 1999 6330174 64 748	, [411504792			
Company: S&ME, Inc.		And the second s	EMSL-BITTO: A Surrel Diffe		
Street: 620 Wendo Park Blyd			ii thi to is totherest note becauseise in Can Thirst Party Hilling empoleus voittan authorization	urads" i from third sody	
City/State/Zip: ML Pleasant,	SG 29464		NAME OF THE PARTY	Control of the second s	
Report To (Namo): Torry Rich	hbarg	Fax:		The state of the s	
Yelephone: 843-884-0005			: trichbwg@smelnc.com	WEST TO THE PARTY OF THE PARTY	
Project Name/Number: 141			1002600992		
Please Provide Results;	Purchase Order:	40.4	dos Takon; SC		
		furnaround Time (TAT) Options' – F			
	Hour 24 H				
an authorization (form for this service. And	o schodule. There is a premium charge for 3 t ly lis completed in accomance with EMSL's To	erms and Conditions located in the Ana	You will be asked to sign lytical Price Gulde.	
PCM - Air Check	if samples are from N		A 1		
☐ NIOSH 7400		AHERA 40 CFR, Part 763	☐ Microvac • ASTA	1 D 5755	
w OSHA 8hr, TW	A	☐ NIOSH 7402	☐ Wipe - ASTM DE	480	
PLM - Bulk (reporting	g (limit)	☐ EPA Lavel II	☐ Carpet Sonicatio	n (EPA 600/J-93/167)	
MPLMEPA SOOIR-9	The second secon	□ (SO 10312	Soil/Rock/Vermicu	and the second s	
☐ PLM EPA NOB (<		TEM - Bulk		· A (0.25% sensitivity)	
Point Count	1 (3)	TEMEPA NOB		3. A G G G G G G G G G G G G G G G G G G	
[[400 (<0.25%) [] 1	888 Jan 403	NYS NOB 198.4 (non-frighte-i	PLM CARB 435		
Point Count wiGravim		Charlield SOP			
AND THE RESERVE OF THE PARTY AND AND AND AND ADDRESS OF THE PARTY AND A		1		· C (0.01% sensitivity)	
☐ 400 (<0.25%) ☐ 11	the great of the same of the R	☐ TEM Mass Analysis-EPA 800	Application of the control of the co	rrotocol (Semi-Quantitative)	
NYS 198.1 (hiable		TEM - Water, EPA 100.2	rantitativa)		
[] NYS 198.6 NO3 (r	tor-frable-NY)	Fibers > 10um Wasto Di			
☐ NIOSH 9002 (<1%)	All Fiber Sizes Waste Dr	inking 🗍		
Check For Positiv	e Stop – Clearly ide	ntify Homogenous Group Filter Po	ore Size (Air Samples): 🔲 0.8	րտ ∏0.45րm	
Samplers Name:		Samplers S		- Control of the Cont	
			Volume/Area (Air)	Date/Time	
Sample #		Sample Description	HA#(Bulk)	Sampled	
OPS-EJ2-01	Expansin	Joint - Spraill AU	e PLM	7-22-15	
OPS-ET2-02	-		PLM	7-22-15	
000 mm 2	***************************************			7-22-15	
OPS-EJ2-03		¥.	TEM	9:07	
Christian A. W. L.			- American	-	
P 1 N					
	<u> </u>				

Client Sample # (s);			Total# of Samples:		
Reilinquished (Client):	-7-2.	Date: 7/322/15	Time:	11:30	
Received (Lab):	Kyl Nba	Date: 7/23/15			
Run all 502	1	unnently, Email t	to . trickburge	5 m R 14 C. COM	
Codestat Successed - Acta the Lab Sacrifes	CDE - ALB - 11/25/2009	Page 5 of Pages	80	20 4253 1405	

APPENDIX V

PHOTOGRAPHS

Asbestos Assessment Exit 218 Spruill Avenue On/Off Ramp North Charleston, South Carolina S&ME Project No. 1413-15-075 Sheet 1 of 1





