



**TENNESSEE DEPARTMENT OF TRANSPORTATION  
ASBESTOS INSPECTION REPORT**

**SR-116 Bridge over Stockstill Creek  
Morgan County  
TDOT Project No. 65006-0217-94  
PIN 115689.00**



Prepared by:



AMEC Environment & Infrastructure, Inc.  
3800 Ezell Road, Suite 100  
Nashville, Tennessee 37211

September 18, 2013  
AMEC Project No. 164613036

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Tennessee Asbestos Management Planner  
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## **1.0 INTRODUCTION**

This report presents the findings of an inspection for asbestos containing materials (ACM) completed on the bridge identified in Section 1.1. The inspection was completed by AMEC Environment & Infrastructure, Inc. in accordance with the State of Tennessee, Department of Transportation Environmental Division, Social and Cultural Resources Office, Hazardous Materials Section requirements.

### **1.1 TDOT Bridge Identification**

The bridge is identified in the TDOT Project System/Bridge Management System as:

TDOT PE Number: 65006-0217-94  
TDOT PIN Number: 115689.00  
Bridge Inventory Number: 65-SR116-02.06 (65SR1160001)  
State Route (SR) Number: SR-116  
Log Mile (LM) Number: LM 2.06

### **1.2 General Description**

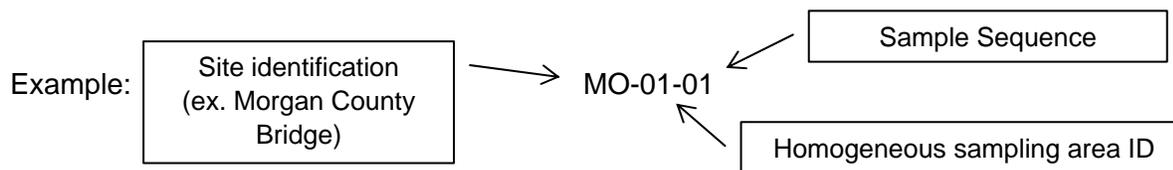
The bridge consists of a two-lane bridge located on SR-116 over Stockstill Creek at LM 2.06 in Petros, Morgan County, Tennessee. The Bridge ID painted on the face of the abutment matches the assignment. Bridge 65-SR116-02.06 (65SR1160001) is a 29-foot long, single span, two-lane structure constructed in 1970. The bridge substructure appears to be unaltered. The substructure consists of two concrete abutments and one simple span. Beams and decking are concrete channels bolted together and topped with asphalt. There was no evidence of concrete repairs to the bridge structure or substructure, and the bridge was not coated with a concrete surfacing material.

## **2.0 INSPECTION**

The identification of ACM is performed by collecting bulk samples of suspect materials and having those samples analyzed by a laboratory. Asbestos-containing materials (ACM) are those materials found to contain greater than 1% asbestos by polarized light microscopy (PLM).

Bulk sampling is a procedure in which representative homogeneous sampling areas in a structure are identified and then sampled. A homogeneous sampling area is defined as an area that contains material of the same type (uniform in color and texture) and is applied during the same general time period. Once the homogeneous areas (HAs) are identified, bulk samples of suspect materials are obtained at the discretion of our inspectors, based on site conditions and past experience.

For asbestos samples collected during the survey, a unique identification that identifies the homogeneous sampling area and unique sampling number for each sample collected was used.



Samples were collected by carefully removing small portions of the suspect material with a clean, sharp knife or other hand tool suitable for the material being sampled. Each sample was placed in a labeled plastic container immediately after collection. Sample containers were then placed in a large re-sealable plastic bag for transportation to the laboratory. The sampling instrument was wiped with a clean moist cloth to decontaminate the tool and minimize the potential release of asbestos fibers or cross-contamination of subsequent samples. Data pertinent to each sample (e.g., date, sample number, material description, and material category) was recorded on a field data sheet.

The survey was limited to an evaluation and confirmation of the presence and approximate quantity of accessible asbestos-containing materials for the bridge. The survey did not include assessments for other regulated building materials such as lead paint and did not include destructive sampling to identify the potential presence of concealed ACMs.

## 2.1 Personnel and Date(s) of Inspection

The sampling and field activities were performed on September 16, 2013, by James K. Hampel, P.E., an accredited State of Tennessee Asbestos Inspector/Management Planner, assisted by Scott Glover, CPESC. A copy of the principal inspector's accreditation and AMEC's current accreditation from the State of Tennessee is included in **Appendix A**.

Due to the low traffic volume and easy access, AMEC did not require assistance from the TDOT Region Bridge or Maintenance Departments.

## 2.2 Visual Survey

AMEC's survey began with a walk-through and visual survey of the structure at this site. The visual survey consisted of:

- sketching the structure and/or verifying the plans provided
- locating and identifying homogeneous areas of suspect materials that may contain asbestos minerals
- determining applicable sampling locations

## 2.3 Access to Bridge Components

Individual bridge components were accessed as described in the following subsections. AMEC collected bulk sample of suspect materials in a random method with a focus on materials



appearing homogeneous with like color and composition. Metal, fiberglass, and wood materials are not considered as suspect ACM and were not sampled.

A total of 18 samples from 6 HAs were collected and submitted for laboratory analysis. **Figure 1** is the side view or profile of the bridge with representative sample locations noted. Photographs of the bridge and various sampling locations are presented in **Appendix B**, and laboratory analytical data sheets are included in **Appendix C**.

### **2.3.1 Top of Bridge Deck**

The bridge was traversed on foot with the AMEC providing a safe work zone during the inspection and sampling. The bridge deck surface material was asphaltic concrete on the concrete channel deck. Samples of the pavement stripe materials were collected (HA-01, HA-02).

### **2.3.2 Underside of Bridge Deck**

The underside of the bridge deck was accessible by foot. The underside of the concrete bridge deck appeared to be homogenous to precast concrete beam channels and was not sampled. The side of the bridge deck appeared to have been cast in place, and samples were collected as part of HA-03.

### **2.3.3 Bridge Beams**

The precast concrete bridge channel beams were accessible by foot from below and samples were collected at locations of concrete damage (HA-05). The concrete beams extended from the abutment to abutment. The Channel beams spans rested on the legs of the channel and diaphragms on thick expansion material like bearing pads (HA-06). There was no evidence that repairs had been made to the bridge beams.

### **2.3.4 Bridge Piers/Bents and Supports**

This bridge was a single, simple span bridge with no intermediate piers or supports.

### **2.3.5 Side Rails**

There was no concrete barrier wall or parapet walls. Railing consisted of metal guard railing attached to the side of the bridge deck with metal supports. No railing materials were observed that required sampling.

### **2.3.6 Abutments**

The abutments on both ends of the bridge were accessed by foot. The abutments were cast in place concrete. The cast in place concrete was sampled as HA-03. The thin material in the



construction joint between the abutment/wing walls and the deck was a thin black layered expansion material (HA-04).

### **3.0 ANALYTICAL PROCEDURES**

#### **3.1 Asbestos Analysis Procedures**

The bulk samples are analyzed in the laboratory using Polarized Light Microscopy (PLM) coupled with dispersion staining (EPA Method 600/R-93/116). PLM is an analytical method for asbestos identification, which identifies the specific asbestos minerals by their unique optical properties. The optical properties are a result of the mineral's chemical composition, physical atomic structure, and visual morphology. This is the U.S. Environmental Protection Agency (EPA) recommended method of analysis for asbestos identification in bulk samples.

In most instances, samples from each homogeneous area are analyzed on a “first positive stop” basis. “First positive stop” means that if one sample from a homogeneous area of material is found to contain greater than 1% asbestos, the remaining samples from that homogeneous area are not analyzed and the material is assumed to contain asbestos. In addition, samples which contain multiple layers, or that have associated mastic or adhesive backing, are analyzed as two or more separate samples. Representative samples that are identified to contain 1% or less asbestos minerals are typically point counted by the laboratory for confirmation.

#### **3.2 Laboratory Name and Accreditation**

The bulk samples collected for this inspection were analyzed by a laboratory that has received accreditation from the National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP). The name and accreditation number of the analytical laboratory that analyzed the samples for this inspection is indicated on the following page in Table 1:

<b>Laboratory</b>	<b>EMSL Analytical, Inc.</b>
<b>NVLAP Number</b>	<b>101048-1</b>

### **4.0 REGULATORY OVERVIEW**

#### **4.1 National Emission Standards for Hazardous Air Pollutants**

The EPA's National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations (40 CFR 61, Subpart B) requires that all regulated asbestos-containing materials (RACM) be properly removed prior to any renovation or demolition activities that will disturb them. These regulations define RACM as:



- Friable ACM.
- Category I non-friable ACM that has become friable.
- Category I non-friable ACM that will be or has been subject to sanding, grinding, cutting, or abrading.
- Category II non-friable ACM that has a high probability of becoming, or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

#### 4.1.1 Definitions

Significant definitions related to regulation of asbestos under NESHAP regulations include:

**Friable asbestos-containing material (ACM)**, is defined by the Asbestos NESHAP, as any material containing more than one percent (1%) asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy (PLM), that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure (Sec. 61.141).

**Non-friable ACM** is any material containing more than one percent (1%) asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy (PLM), that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. EPA also defines two categories of non-friable ACM, Category I and Category II non-friable ACM, which are described as follows:

**Category I non-friable ACM** is any asbestos-containing packing, gasket, resilient floor covering or asphalt roofing product which contains more than one percent (1%) asbestos as determined using polarized light microscopy (PLM) according to the method specified in Appendix A, Subpart F, 40 CFR Part 763 (Sec. 61.141).

**Category II non-friable ACM** is any material, excluding Category I non-friable ACM, containing more than one percent (1%) asbestos as determined using polarized light microscopy according to the methods specified in Appendix A, Subpart F, 40 CFR Part 763 that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure (Sec.61.141).

**"Regulated Asbestos-Containing Material" (RACM)** is (a) friable asbestos material, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting or abrading, or (d) Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.



**Friable materials** are defined as those which can be crumbled, pulverized, or reduced to powder by hand pressure when dry. The NESHAP regulations also establish specific notification and control requirements for renovation and demolition work.

## 5.0 RESULTS

The results of the asbestos inspection are presented in the following section.

### 5.1 Results of Asbestos Bulk Sample Analysis

A total of 18 samples were obtained from the bridge. Multiple samples of each homogeneous area were collected in accordance with State of Tennessee, Department of Transportation Environmental Division, Social and Cultural Resources Office, Hazardous Materials Section requirements and delivered to the laboratory for visual observation and microscopic analysis. The samples were selected based on homogeneous areas of suspect materials, as described in Section 2.3.

Chrysotile (40%) asbestos fibers were detected in the thin expansion material used to isolate the deck from the abutment (HA-04). Chrysotile (60%) asbestos was also identified in the thick expansion like material used as bearing pads atop the abutments under the beams and diaphragms (HA-06). Any materials similar in appearance are considered ACM. See **Appendix B** for pictures of the materials. As discussed above in Section 3.1, the remaining samples from the HAs were not analyzed. No asbestos was detected in the other analyzed samples.

The analytical results of all the samples collected from the property, along with the chain-of-custody records, are included in **Appendix C**.

**Table 2: Positive Bulk Asbestos Sample Results**

Sample Number	Description	Type	Sample Location	Percent Asbestos
MO-04-01	Thin Expansion Material	Misc/NF	Abutments at wingwall	40% Chrysotile
MO-06-01	Bearing Pads Thick	Misc/Potentially Friable	Top Abutments under Beams	60% Chrysotile

## 6.0 QUALIFICATIONS

The information presented herein is based on information obtained during the site visit(s) and from previous experience. If additional information becomes available which might impact our conclusions or recommendations, AMEC requests the opportunity to review the information, reassess the potential concerns, and modify opinions, if warranted.

This report has been prepared on behalf of the Tennessee Department of Transportation. This document is not a Bid Document or a Contract Document. Use of this report or reliance upon information contained in this report by any other party implies an agreement by that party to the



same terms and conditions under which service was provided. Furthermore, any party, other than our Client, relying on this document is cautioned that all conclusions made or decisions arrived at based on their review of this document are those solely of the third party, without warranty, guarantee or promise by the author. These findings are relevant to the dates of our services and should not be relied upon to represent conditions at substantially earlier or later dates.



**Figure**  
**(Depicting Sample Locations)**



MO-03-01

MO-03-01

MO-03-04

MO-01-01  
MO-02-01

MO-06-01

MO-05-03

**LEGEND**

● **SAMPLE LOCATIONS**

65-116-206

**NOTES:**

- 1) SAMPLE LOCATIONS ILLUSTRATED ARE GENERALIZED
- 2) DUPLICATE SAMPLES NOT SHOWN FOR CLARITY
- 3) BULK SAMPLES WERE COLLECTED SEPTEMBER 16TH, 2013

	CLIENT: TDOT - TENNESSEE DEPARTMENT OF TRANSPORTATION TDOT PE NO. 65006-0217-94, PIN 115689.00	DRAWN BY: JFM	PROJECT: Asbestos Survey SR-116, Bridge over Stockstill Creek, LM 2.06 Bridge No. 65-SR116-02.06 (65SR1160001) Petros, Morgan County, Tennessee	9/20/2013
	AMEC Environment & Infrastructure, Inc. 3800 Ezell Road, Suite 100 Nashville, Tennessee 37211 Phone: 615-333-0630 Fax: 615-781-0655		CHECKED BY: JKH	PROJECT NO: 164613036
			REVIEWED BY: BKG	TITLE: FIGURE 1 BRIDGE PROFILE DEPICTING SAMPLE LOCATIONS
			SCALE: NOT TO SCALE	



## **APPENDIX A**

### **Asbestos Inspection Accreditations**

THE STATE OF TENNESSEE  
Department of Environment and Conservation Toxic Substances Program



**James K. Hampel**

DOB: 10-Jun-1949    Sex: M    HGT: 6'0"    WGT: 270

Discipline	Accreditation	Expiration
Management Planner	A-MP-48068-22956	Sep-30-2013
Project Designer	A-PD-48068-22956	Sep-30-2013

Individual

Initial

Date Issued: 10/10/2012

**Asbestos Accreditation**



## THE STATE OF TENNESSEE

Department of Environment and Conservation Division of Solid Waste Management  
Toxic Substances Program

William R. Snodgrass Tennessee Tower  
312 Rosa L. Parks Avenue, 14th Floor Nashville TN 37243

**By virtue of the authority vested by the Division of Solid Waste Management, the Company named below is hereby accredited to offer and/or conduct Asbestos activities pursuant to Rule 1200-01-20:**

### **AMEC Environment & Infrastructure, Inc.**

3800 Ezell Road, Suite 100 Nashville TN, 37211

**to conduct ASBESTOS ACTIVITIES in schools or public and commercial buildings in Tennessee. This firm is responsible for compliance with the applicable requirements of Rule 1200-01-20.**

Discipline	Type	Accreditation Number	Effective Date	Expiration Date
Accreditation	Re-Accreditation	A-F-948-27926	June 01, 2013	June 30, 2014

Given under the Seal of the State of Tennessee in Nashville.

This **16th** Day of **July 2013**



Division of Solid Waste Management  
Toxic Substance Program

CN-1324 (Rev 6/13)

RDA-3020



## **APPENDIX B**

### **Photographs**

AMEC Environment & Infrastructure, Inc.  
Photographic Record

Client: TDOT

Project Number: 164613036

Site Name: SR-116 Bridge over Stockstill Creek Site Location: Morgan County

Photographer:  
J. Hampel

Date: 9-16-2013

Direction:  
East

Comments:  
P-1 – Approach to  
Bridge from the West.  
Bridge defined by  
yellow & black  
warning signs.



Photographer:  
S. Glover

Date: 9-16-2013

Direction:  
North

Comments:  
P-2 – Bridge is a  
simple span of 29  
feet from Abutment 1  
(left) to Abutment 2.  
Side guard rails are  
all metal.



AMEC Environment & Infrastructure, Inc.  
Photographic Record

Client: TDOT

Project Number: 164613036

Site Name: SR-116 Bridge over Stockstill Creek Site Location: Morgan County

Photographer:  
S. Glover

Date: 9-16-2013

Direction:  
NA

**Comments:**  
P-3 – Bridge Identification Number on Abutment 1. The thick expansion material (60%) on top of abutments under legs of Channel Beams (MO-06-01) is used as a bearing pad.



Photographer:  
J. Hampel

Date: 9-16-2013

Direction:  
East

**Comments:**  
P-4 – Abutments are cast in place concrete with wingwalls. Side of bridge is also cast in place. Thin expansion material isolates the span from the abutment.



AMEC Environment & Infrastructure, Inc.  
Photographic Record

Client: TDOT

Project Number: 164613036

Site Name: SR-116 Bridge over Stockstill Creek Site Location: Morgan County

Photographer:  
S. Glover

Date: 9-16-2013

Direction:  
East

Comments:  
P-4- Bridge is constructed of precast concrete channels bolted together. Weep holes in abutment are steel pipes.

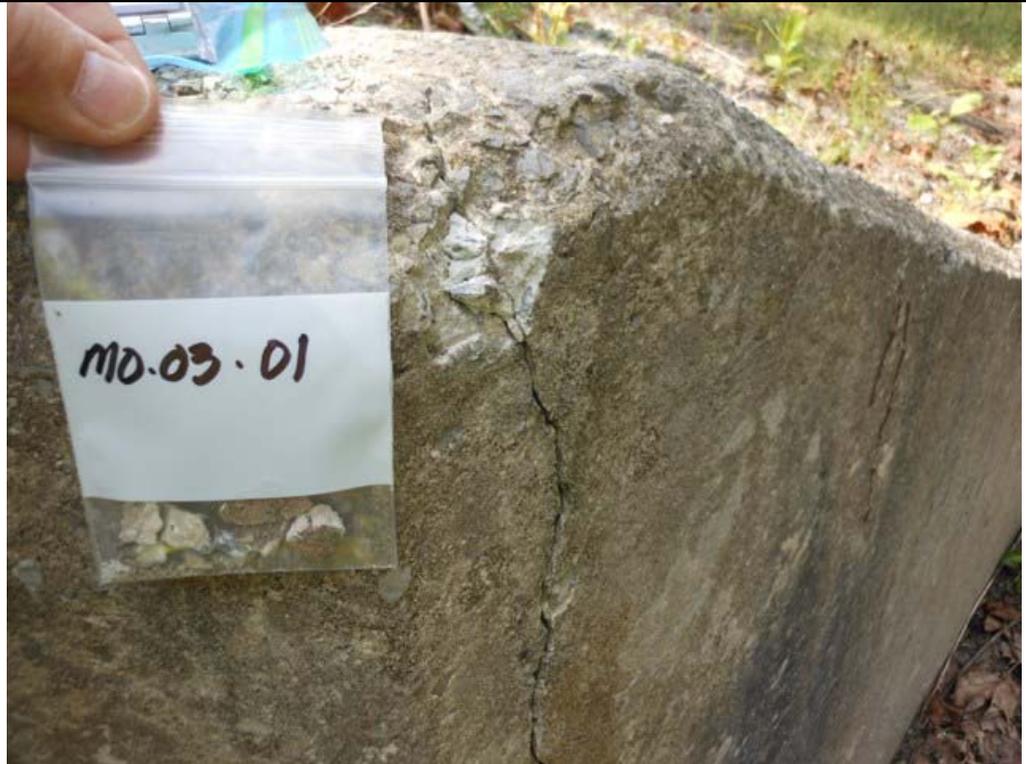


Photographer:  
J. Hampel

Date: 9-16-2013

Direction:  
NA

Comments:  
P-5 –Concrete sample of cast-in-place concrete collected from the wingwall. Cast in place concrete was not ACM.



AMEC Environment & Infrastructure, Inc.  
Photographic Record

Client: TDOT

Project Number: 164613036

Site Name: SR-116 Bridge over Stockstill Creek Site Location: Morgan County

Photographer:  
J. Hampel

Date: 9-16-2013

Direction:  
NA

Comments:  
P-7 – Close-up of thin expansion material that isolates the side of the bridge from the wingwall. The thin material sample contained 40% asbestos.

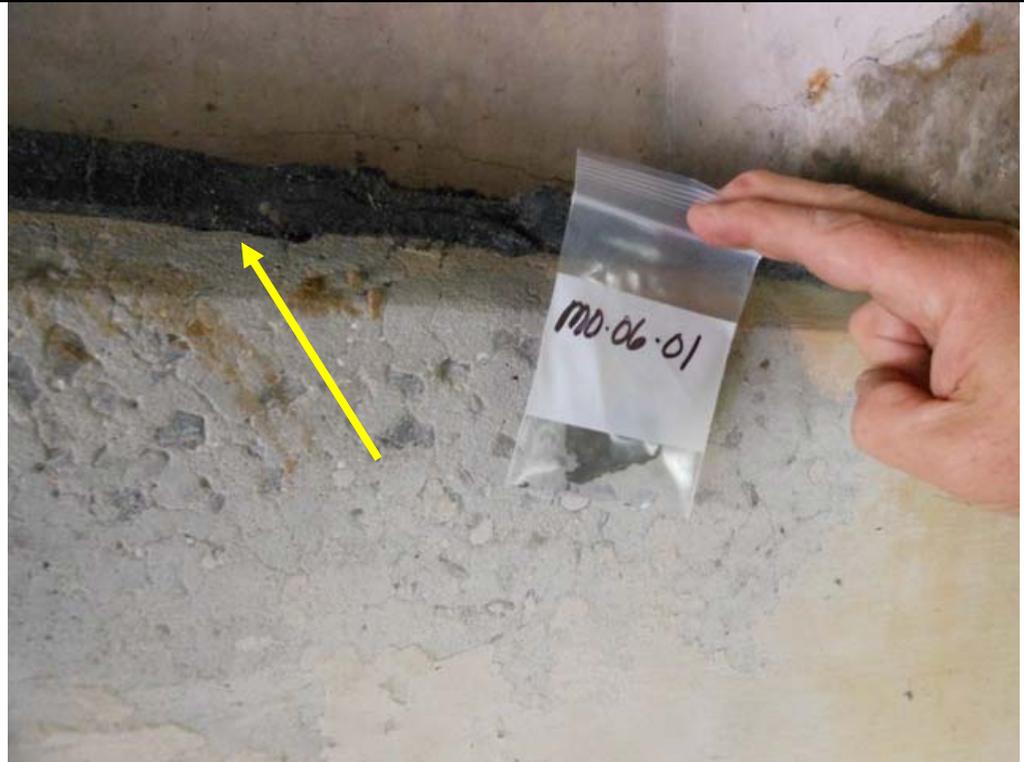


Photographer:  
S. Glover

Date: 9-16-2013

Direction:  
NA

Comments:  
P-8 – Close up of Thick expansion material used as bearing pads under channel beams. Bearing pad material contained 60% asbestos



AMEC Environment & Infrastructure, Inc.  
Photographic Record

Client: TDOT

Project Number: 164613036

Site Name: SR-116 Bridge over Stockstill Creek Site Location: Morgan County

Photographer:  
J. Hampel

Date: 9-16-2013

Direction:  
NA

Comments:  
P-9 Precast concrete  
were collected from  
locations where  
concrete was spalling  
from beams.  
Concrete samples did  
not contain asbestos.



Photographer:  
S. Glover

Date: 9-16-2013

Direction:  
NA

Comments:  
P-10 Yellow and  
white striping were  
the only suspect  
materials on the top  
of the bridge. Striping  
samples did not  
contain asbestos.





## **APPENDIX C**

### **Asbestos Sample Laboratory Analysis Data**



# EMSL Analytical, Inc

2205 Corporate Plaza Parkway SE, Suite 200, Smyrna, GA 30080

Phone/Fax: (770) 956-9150 / (770) 956-9181

<http://www.EMSL.com>

[atlantalab@emsl.com](mailto:atlantalab@emsl.com)

EMSL Order:	071305096
CustomerID:	OGDE60
CustomerPO:	1001039789
ProjectID:	

Attn: **JIM HAMPEL**  
**AMEC E&I, Inc.**  
**3800 Ezell Road**  
**Suite 100**  
**Nashville, TN 37211**

Phone: (615) 333-0630  
 Fax: (615) 781-0655  
 Received: 09/17/13 9:55 AM  
 Analysis Date: 9/18/2013  
 Collected: 9/16/2013

Project: 164613036

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
MO-01-01 071305096-0001	East Abutment - Yellow Stripe	Yellow Non-Fibrous Homogeneous	HA: 1	100% Non-fibrous (other)	None Detected
MO-01-02 071305096-0002	West Abutment - Yellow Stripe	Yellow Non-Fibrous Homogeneous	HA: 1	100% Non-fibrous (other)	None Detected
MO-02-01 071305096-0003	East Abutment - White Stripe	White Non-Fibrous Homogeneous	HA: 2	100% Non-fibrous (other)	None Detected
MO-02-02 071305096-0004	West Abutment - White Stripe	White Non-Fibrous Homogeneous	HA: 2	100% Non-fibrous (other)	None Detected
MO-03-01 071305096-0005	Wingwall-West Abutment - Cast in Place Concrete	Various Non-Fibrous Heterogeneous	HA: 3	100% Non-fibrous (other)	None Detected
MO-03-02 071305096-0006	Deck-West Abutment - Cast in Place Concrete	Various Non-Fibrous Heterogeneous	HA: 3	100% Non-fibrous (other)	None Detected
MO-03-03 071305096-0007	Wingwall-East Abutment - Cast in Place Concrete	Various Non-Fibrous Heterogeneous	HA: 3	100% Non-fibrous (other)	None Detected

Analyst(s)

Anthony Sanaie (9)  
 Victoria Panariello (4)

Victoria Panariello, Asbestos Lab Manager  
 or other approved signatory

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 Samples analyzed by EMSL Analytical, Inc Smyrna, GA NVLAP Lab Code 101048-1

Report Amended: 09/18/2013 14:24:45 Replaces the Initial Report 09/18/2013 13:19:20. Reason Code: Data Entry-Change to Ship Address



# EMSL Analytical, Inc

2205 Corporate Plaza Parkway SE, Suite 200, Smyrna, GA 30080

Phone/Fax: (770) 956-9150 / (770) 956-9181

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EMSL Order:	071305096
CustomerID:	OGDE60
CustomerPO:	1001039789
ProjectID:	

Attn: <b>JIM HAMPEL</b> <b>AMEC E&amp;I, Inc.</b> <b>3800 Ezell Road</b> <b>Suite 100</b> <b>Nashville, TN 37211</b>	Phone: (615) 333-0630 Fax: (615) 781-0655 Received: 09/17/13 9:55 AM Analysis Date: 9/18/2013 Collected: 9/16/2013
Project: 164613036	

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
MO-03-04 071305096-0008	Deck-East Abutment - Cast in Place Concrete	Various Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
			HA: 3		
MO-04-01 071305096-0009	West Abutment @ Wingwall NW - Expansion Material Thin	Black Fibrous Homogeneous		60% Non-fibrous (other)	40% Chrysotile
			HA: 4		
MO-04-02 071305096-0010	West Abutment @ Wingwall SW - Expansion Material Thin				Stop Positive (Not Analyzed)
			HA: 4		
MO-04-03 071305096-0011	West Abutment @ Wingwall NW - Expansion Material Thin				Stop Positive (Not Analyzed)
			HA: 4		
MO-04-04 071305096-0012	East Abutment @ Wingwall NE - Expansion Material Thin				Stop Positive (Not Analyzed)
			HA: 4		
MO-05-01 071305096-0013	Beam @ West Abutment NW - Precast Concrete Beams	Various Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
			HA: 5		

Analyst(s)  
 \_\_\_\_\_  
 Anthony Sanaie (9)  
 Victoria Panariello (4)

  
 Victoria Panariello, Asbestos Lab Manager  
 or other approved signatory

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 Samples analyzed by EMSL Analytical, Inc Smyrna, GA NVLAP Lab Code 101048-1

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[atlantalab@emsl.com](mailto:atlantalab@emsl.com)

EMSL Order:	071305096
CustomerID:	OGDE60
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ProjectID:	

Attn: <b>JIM HAMPEL</b> <b>AMEC E&amp;I, Inc.</b> <b>3800 Ezell Road</b> <b>Suite 100</b> <b>Nashville, TN 37211</b>	Phone: (615) 333-0630 Fax: (615) 781-0655 Received: 09/17/13 9:55 AM Analysis Date: 9/18/2013 Collected: 9/16/2013
Project: 164613036	

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
MO-05-02 071305096-0014	Beam @ West Abutment Center - Precast Concrete Beams	Various Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
HA: 5					
MO-05-03 071305096-0015	Beam @ East Abutment SE - Precast Concrete Beams	Various Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
HA: 5					
MO-06-01 071305096-0016	West Abutment Under Beams - Thick Bearing Pad Expansion Board	Black Fibrous Homogeneous		40% Non-fibrous (other)	60% Chrysotile
HA: 6					
MO-06-02 071305096-0017	West Abutment Under Beams - Thick Bearing Pad Expansion Board				Stop Positive (Not Analyzed)
HA: 6					
MO-06-03 071305096-0018	East Abutment Under Beams - Thick Bearing Pad Expansion Board				Stop Positive (Not Analyzed)
HA: 6					

Analyst(s)  
 Anthony Sanaie (9)  
 Victoria Panariello (4)

  
 Victoria Panariello, Asbestos Lab 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 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 Smyrna, GA NVLAP Lab Code 101048-1

Report Amended: 09/18/2013 14:24:45 Replaces the Initial Report 09/18/2013 13:19:20. Reason Code: Data Entry-Change to Ship Address



# Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

EMSL ANALYTICAL, INC.  
200 ROUTE 130 NORTH  
CINNAMINSON, NJ 08077  
PHONE: (800) 220-3675  
FAX: (856) 786-5974

EMSL ANALYTICAL, INC.  
LABORATORY • PRODUCTS • TRAINING

071305096

Company: <b>AMEC E&amp;I</b>		EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different <small>If Bill to is Different note Instructions in Comments**</small>	
Street: <b>3800 BELL ROAD, Suite 100</b>		<small>Third Party Billing requires written authorization from third party</small>	
City: <b>NASHVILLE</b>	State/Province: <b>TN</b>	Zip/Postal Code: <b>37211</b>	Country: <b>USA</b>
Report To (Name): <b>JIM HAMPPEL</b>		Telephone #: <b>615-333-0630</b>	
Email Address: <b>james.hampel@amec.com</b>		Fax #: <b>615-781-0655</b>	Purchase Order:
Project Name/Number: <b>164613036</b>		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
U.S. State Samples Taken: <b>TN</b>		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 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

<p><b>PLM - Bulk (reporting limit)</b></p> <p><input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (&lt;1%)</p> <p><input type="checkbox"/> PLM EPA NOB (&lt;1%)</p> <p>Point Count <input type="checkbox"/> 400 (&lt;0.25%) <input type="checkbox"/> 1000 (&lt;0.1%)</p> <p>Point Count w/Gravimetric <input type="checkbox"/> 400 (&lt;0.25%) <input type="checkbox"/> 1000 (&lt;0.1%)</p> <p><input type="checkbox"/> NIOSH 9002 (&lt;1%)</p> <p><input type="checkbox"/> NY ELAP Method 198.1 (friable in NY)</p> <p><input type="checkbox"/> NY ELAP Method 198.6 NOB (non-friable-NY)</p> <p><input type="checkbox"/> OSHA ID-191 Modified</p> <p><input type="checkbox"/> Standard Addition Method</p>	<p><b>TEM - Bulk</b></p> <p><input type="checkbox"/> TEM EPA NOB - EPA 600/R-93/116 Section 2.5.5.1</p> <p><input type="checkbox"/> NY ELAP Method 198.4 (TEM)</p> <p><input type="checkbox"/> Chatfield Protocol (semi-quantitative)</p> <p><input type="checkbox"/> TEM % by Mass - EPA 600/R-93/116 Section 2.5.5.2</p> <p><input type="checkbox"/> TEM Qualitative via Filtration Prep Technique</p> <p><input type="checkbox"/> TEM Qualitative via Drop Mount Prep Technique</p> <p style="text-align: center;"><b>Other</b></p> <p><input type="checkbox"/></p>
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Check For Positive Stop - Clearly Identify Homogenous Group      Date Sampled: **9/16/2013**

Samplers Name: **JAMES K. HAMPPEL**      Samplers Signature: *[Signature]*

Sample #	HA #	Sample Location	Material Description
MO-01 01	01	EAST ABUTMENT	Yellow stripe
02	01	WEST ABUTMENT	Yellow stripe
MO-02 01	02	EAST ABUTMENT	White stripe
02	02	WEST ABUTMENT	White stripe
MO-03 01	03	CAST IN PLACE CONCRETE	Wingwall - West Abutment
02	↓	↓	Deck - West Abutment
03	↓	↓	Wingwall - East Abutment
04	↓	↓	Deck - East Abutment

Client Sample # (s): **MO-01-01** - **MO-06-03**      Total # of Samples: **18**

Relinquished (Client): *[Signature]*      Date: **9/16/2013**      Time: **Fea**

Received (Lab): *[Signature]*      Date: **9/17/13**      Time: **0955 R-E**

Comments/Special Instructions:

ACCEPTED FOR ANALYSIS  
BY EMSL ANALYTICAL, INC.  
ATLANTA, GA

