

# HAZARDOUS MATERIALS ASSESSMENT



ANDERSON COUNTY EMERGENCY BRIDGE PACKAGE 2020-1

TIMMS MILL ROAD S-4-174  
PENDLETON, SOUTH CAROLINA 29671

ECS PROJECT NO. 49:11398

SCDOT Project ID: P039600

FOR: SCDOT

MARCH 20, 2020





March 20, 2020

Mr. Trapp Harris  
SCDOT  
955 Park Street  
Room 421  
Columbia, South Carolina 29201  
harrismd@scdot.org

ECS Project No. 49:11398

Reference: Hazardous Materials Assessment, Anderson County Emergency Bridge Package  
2020-1, Timms Mill Road S-4-174, Pendleton, South Carolina

Dear Mr. Harris:

ECS Southeast, LLP (ECS) is pleased to provide the South Carolina Department of Transportation (SCDOT) with the results of the Hazardous Materials Assessment performed at the referenced property. This report summarizes our observations, analytical results, findings, and recommendations related to the work performed. The work described in this report was performed by ECS in general accordance with the Scope of Services described in ECS Proposal Number 49:24429 and the terms and conditions of the agreement authorizing those services.

Based on our assessment and laboratory analysis of samples collected, ECS concludes the following:

Yes, Asbestos was found       **Yes, Lead-Based Paint was found**  
 **No, Asbestos was not found**       No, Lead-Based Paint was not found

ECS appreciates this opportunity to provide SCDOT with our services. If we can be of further assistance to you, please do not hesitate to contact us.

Sincerely,

ECS Southeast, LLP

Matthew J. Wilbanks  
Environmental Scientist  
mwilbanks@ecslimited.com  
864-987-1610

Tina Stewart, REM  
Environmental Principal  
tstewart@ecslimited.com  
336-856-7150

## EXECUTIVE SUMMARY

The subject property is improved with a two-lane dilapidated bridge spanning Six and Twenty Creek located on Timms Mill Road in Pendleton, Anderson County, South Carolina. The bridge is approximately 60' long and 24' wide. The structure consists of concrete parapets and metal guardrails, concrete girders, wooden columns, and is covered with an asphalt road surface. At the time of our assessment, the bridge was closed and is scheduled to be demolished.

The assessment was performed by Mr. Matthew Wilbanks (SC Asbestos Inspector No. BI-01688). The asbestos assessment consisted of observing the accessible areas of the structure for the presence of suspect materials which may contain asbestos. The assessment involved detecting both friable materials (materials which can be pulverized or reduced to a powder by hand pressure when dry) and non-friable materials (materials which pose a hazard when sawn, sanded, drilled or pulverized). Homogeneous materials (based on material type, color, texture, etc.) were identified in various functional spaces during the assessment.

EMSL Analytical, Inc. (EMSL) submitted a signed final laboratory report to ECS on March 20, 2020. None of the bulk samples submitted for analysis were reported to contain asbestos in detectable concentrations. A complete list of the sampled materials submitted for analysis and sample locations are located in the Appendix. Photographs of collected samples are also located in the Appendix.

Paint chip samples were collected from miscellaneous painted surfaces and submitted to EMSL for analysis via Flame Atomic Absorption (FAA) Spectroscopy. Lead-based paint was identified on the following bridge components:

- Orange on Metal Brackets - 60% by weight; and,
- Silver Guardrail Coating - 0.72% by weight.

The presence of lead is a concern primarily when conditions exist where it may be inhaled or ingested. Regardless of the analytical results of a material, all painted and/or glazed surfaces may still contain concentrations of lead in the paint, which when disturbed, may generate lead dust greater than the Permissible Exposure Limit (PEL) of 50 micrograms per cubic meter (ug/m<sup>3</sup>) as an 8-hour Time Weighted Average (TWA) established by the OSHA "Lead Exposure in Construction Rule (29 CFR 1926.62)."

Recommendations regarding the removal and disposal of LBPs identified by ECS can be found in Section 5.0 of this report.

The executive summary is an integral portion of this report, however, ECS recommends the report be read in its entirety.

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## 1.0 SITE DESCRIPTION

The subject property is improved with a two-lane dilapidated bridge spanning Six and Twenty Creek located on Timms Mill Road in Pendleton, Anderson County, South Carolina. The bridge is approximately 60' long and 24' wide. The structure consists of concrete parapets and metal guardrails, concrete girders, wooden columns, and is covered with an asphalt road surface. At the time of our assessment, the bridge was closed and is scheduled to be demolished.

## 2.0 PURPOSE

The purpose of the Hazardous Materials Assessment was to identify asbestos-containing materials (ACMs) and lead-based paint (LBP) which may require special handling and/or disposal if removed during construction activities. The identification of ACMs may require trained labor, regulated work practices, and special disposal. The identification of LBP or other lead hazards may require disclosure to contractors and monitoring of lead exposure.

## 3.0 METHODOLOGY

ECS performed the authorized Scope of Services in general accordance with our proposal, standard industry practice(s) and methods specified by regulation(s) for the identification of ACMs and LBPs.

### 3.1 Asbestos-Containing Materials

The asbestos assessment was performed by Mr. Matthew Wilbanks (SC Asbestos Inspector No. BI-01688) on March 12, 2020. The assessment consisted of observing the accessible areas of the structure for the presence of suspect materials which may contain asbestos. The assessment involved detecting both friable materials (materials which can be pulverized or reduced to a powder by hand pressure when dry) and non-friable materials (materials which pose a hazard when sawn, sanded, drilled or pulverized). Homogeneous materials (based on material type, color, texture, etc.) were identified in various functional spaces during the assessment.

As per South Carolina Department of Health and Environmental Control (SCDHEC), samples were collected from random locations of each homogeneous area, with the material's number of samples based upon the following criteria:

- Thermal Insulation Materials (piping, breeching, boiler insulation, etc.) – A minimum of three (3) samples are required. Patch areas (less than 6 square or linear feet) may have one (1) sample collected.
- Surfacing Materials (plaster, fireproofing, etc.) – A minimum of seven (7) samples are to be taken for areas greater than 5,000 square feet; five (5) for areas greater than 1,000 square feet, but less than 5,000 square feet; three (3) for areas less than 1,000 square feet.
- Miscellaneous Materials (flooring, adhesives, roofing, wallboard, etc.) – A minimum of three (3) samples are required.

In order to determine if the suspect materials observed during the visual assessment contained asbestos, representative bulk samples were collected and placed in sealed packages. Samples were collected during the assessment and submitted to EMSL in Pineville, North Carolina for analysis using the EPA recommended method of Polarized Light Microscopy (PLM) coupled with dispersion

staining (Method No. EPA 600/M4-020-82, Dec. 1982). EMSL participates in the National Voluntary Laboratory Accreditation Program (NVLAP). Their NVLAP accreditation number is 200841-0. Several of the samples were layered and analyzed as multiple samples. Samples determined to be negative by PLM but were classified as non-friable organically bound materials were reanalyzed by transmission electron microscopy (TEM) using the Chatfield method for confirmation of sample analysis in accordance with SCDHEC requirements. EPA regulations require that multiple samples of each homogeneous area be collected for laboratory analysis. The material type, sample location, and analytical results of each bulk sample are also summarized in the Asbestos Bulk Analysis report located in the Appendix.

During the assessment, ECS attempted to identify suspect ACMs in readily accessible areas. However, due to the destructive means required to identify some materials, certain areas were deemed inaccessible (i.e. behind walls or sub grade materials) and were not assessed for suspect ACMs. Unidentified suspect ACMs may be located in these and/or other inaccessible areas.

Samples were collected in general accordance with EPA Standard 40 CFR 763 Subpart E, Asbestos Hazard Emergency Response Act (AHERA) and OSHA Standard 29 CFR 1926.1101 Inspection Protocol. Multiple samples of each unique material were submitted. Samples were analyzed using "Positive Stop" methodology. If one sample of a homogeneous material is reported to contain asbestos, the remaining samples of that material are not analyzed. EPA regulations stipulate that if one sample contains asbestos the entire quantity of that material contains asbestos, regardless of additional analysis.

### **3.2 Lead in Paint and Surface Coatings**

The Lead-Based Paint (LBP) assessment was performed by ECS Inspector Mr. Matthew Wilbanks. Paint chip samples were collected from painted surfaces and submitted to EMSL for analysis via Flame Atomic Absorption (FAA) Spectroscopy.

The assessment was conducted utilizing the U.S. EPA definition of LBP. Under this definition, painted surfaces which contain lead in concentrations equal to or greater than 0.5 percent by weight ( $\geq 0.5\%$  by weight) are classified as coated with LBP. Paints with concentrations of lead detectable by laboratory analysis are considered lead-containing paints. Additionally, fixtures or components that are manufactured with a factory applied glazing (i.e., sinks, toilets, ceramic tiles, etc.) are tested as these factory-applied finishes often contain lead. Activities which disturb lead-containing paints and glazing (while not lead-based paints by the U.S. EPA definition) are regulated by OSHA (29 CFR 1926.62).

Because the current or proposed use of the property is not residential or child-occupied, the scope of the LBP assessment was not conducted in accordance with HUD Chapter 7 requirements. This representative assessment included collecting samples from miscellaneous painted bridge components.

## 4.0 RESULTS

The following is a summary of laboratory results, findings and observations.

### 4.1 Asbestos-Containing Materials

In total, twelve (12) bulk samples from four (4) homogeneous areas were submitted to the laboratory of which twelve (12) layers were analyzed.

EMSL Analytical, Inc. submitted a signed final laboratory report to ECS on March 20, 2020. None of the bulk samples submitted for analysis were reported to contain asbestos in detectable concentrations. A complete list of the sampled materials submitted for analysis and sample locations are located in the Appendix. Photographs of collected samples are also located in the Appendix.

#### Summary of Asbestos-Containing Materials Identified

Sample ID	Location	Material Description	Analytical Results	Category	Estimated Quantity
01-01, 02, 03	Top of Wood Columns	Felt	None Detected (ND)	Not Applicable (N/A)	15 SF
02-01, 02, 03	Above Cross Girders	Felt	ND	N/A	200 SF
03-01, 02, 03	Throughout	Concrete	ND	N/A	1,750 SF
04-01, 02, 03	Expansion Joints	Tar	ND	N/A	10 SF

Quantities are estimates and should be field verified

### 4.2 Suspect or Assumed Asbestos-Containing Materials

Due to the inaccessibility or the destructive means that asbestos sampling requires, additional suspect ACMs associated with the bridge structure may be hidden in inaccessible areas that include, but are not limited to, sub-grade walls, structural members, topping slabs, sub-grade sealants, pipe trenches, and subsurface utilities, etc. These areas were deemed inaccessible and were not assessed.

If these materials are discovered during construction activities, they should be presumed to contain asbestos and be treated as ACMs or be sampled immediately upon discovery and prior to disturbance for asbestos content by a certified asbestos inspector in accordance with 29 CFR 1926.1101.

### 4.3 Lead in Paint and Surface Coatings

Lead-based paint (LBP) is defined by the U.S. EPA and South Carolina as any paint or other surface coatings that contain lead equal to or in excess of 0.5% by weight.

Paint and surface coatings which contain detectable concentrations of lead are considered “lead-containing paints”. Since OSHA has no specific action level for lead in paint, all paint on the site found to have a measurable concentration of lead should be assumed to be lead-containing. Work performed which may disturb lead-containing paint is regulated under OSHA as referenced under 29 CFR 1926.62. A total of four (4) paint chip samples were collected during the assessment. Paint and other surface coatings which are defined by applicable regulations as LBPs are summarized in the table below and photographs of LBP identified are located in the Appendix.

**Summary of Paint Chip Analysis**

Location	Color	Substrate	Component	Lead Concentration (% by weight)
Brackets	Orange	Metal	Brackets	60%
Guardrails	Silver	Metal	Guardrails	0.72%

**5.0 RECOMMENDATIONS AND REGULATORY REQUIREMENTS**

Based on our understanding of the purpose of the Hazardous Materials Assessment, the results of laboratory analysis, and our findings and observations, ECS presents the following recommendations.

**5.1 Asbestos-Containing Materials**

None of the bulk samples submitted to EMSL Analytical, Inc. were reported to contain detectable concentrations of asbestos. If additional suspect asbestos-containing materials are uncovered which were not accessible during this sampling event, it is recommended that these materials be sampled or tested immediately upon discovery for asbestos content by an asbestos inspector in accordance with 29 CFR 1926.1101.

**5.2 Lead in Paint and Surface Coatings**

Based on the findings of the lead assessment, detectable concentrations of lead were identified on some paints and surface coatings. Since lead concentrations detected in two of the four samples analyzed exceeded 0.5% by weight, both samples are considered LBP. The LBP should be handled and/or disposed of in accordance with applicable Federal, State, and local regulations.

The presence of lead is a concern primarily when conditions exist where it may be inhaled or ingested. Regardless of the analytical results of a material, all painted and/or glazed surfaces may still contain concentrations of lead in the paint, which when disturbed, may generate lead dust greater than the Permissible Exposure Limit (PEL) of 50 micrograms per cubic meter (ug/m3) as an 8-hour Time Weighted Average (TWA) established by the OSHA “Lead Exposure in Construction Rule (29 CFR 1926.62).”

The OSHA standard gives no guidance on acceptable levels of lead in paint at which no exposure to airborne lead (above the action level) would be expected. Rather, OSHA defines airborne concentrations and references specific types of work practices and operations from which a lead hazard may be generated (reference 29 CFR 1926.62, section d). Environmental and personnel monitoring should be conducted during any removal/demolition process (as appropriate) to verify



that actual personal exposures are below the Permissible Exposure Limit (PEL) of 50 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) as an 8-hour Time Weighted Average (TWA). Under OSHA requirements, the contractor performing renovation work will be required to conduct this monitoring and follow applicable requirements under 29 CFR 1926.62 if disturbing lead-containing paint.

## 6.0 LIMITATIONS

The conclusions and recommendations presented within this report are based upon a reasonable level of assessment within normal bounds and standards of professional practice for a site in this particular geographic setting. ECS is not responsible or liable for the discovery and elimination of hazards that may potentially cause damage, accidents, or injuries.

The observations, conclusions, and recommendations pertaining to environmental conditions at the subject site are necessarily limited to conditions observed, and/or materials reviewed at the time this study was undertaken. No warranty, expressed or implied, is made with regard to the conclusions and recommendations presented within this report. This report is provided for the exclusive use of the client. This report is not intended to be used or relied upon in connection with other projects or by other unidentified third parties without the written consent of ECS and the client.

Our recommendations are in part based on federal, state, and local regulations and guidelines. ECS does not assume the responsibility of the person(s) in charge of the site, or otherwise undertake responsibility for reporting to any local, state, or federal public agencies, any conditions at the site that may present a potential danger to public health, safety, or the environment. Under this scope of services, ECS assumes no responsibility regarding any response actions initiated as a result of these findings. General compliance with regulations and response actions are the sole responsibility of the Client and should be conducted in accordance with local, state, and/or federal requirements.

# **Appendix I: Figures**



**Anderson County Emergency  
Bridge Package**

**Timms Mill Road & Six and  
Twenty Creek**

Pendleton, SC  
Project No. 49-10398

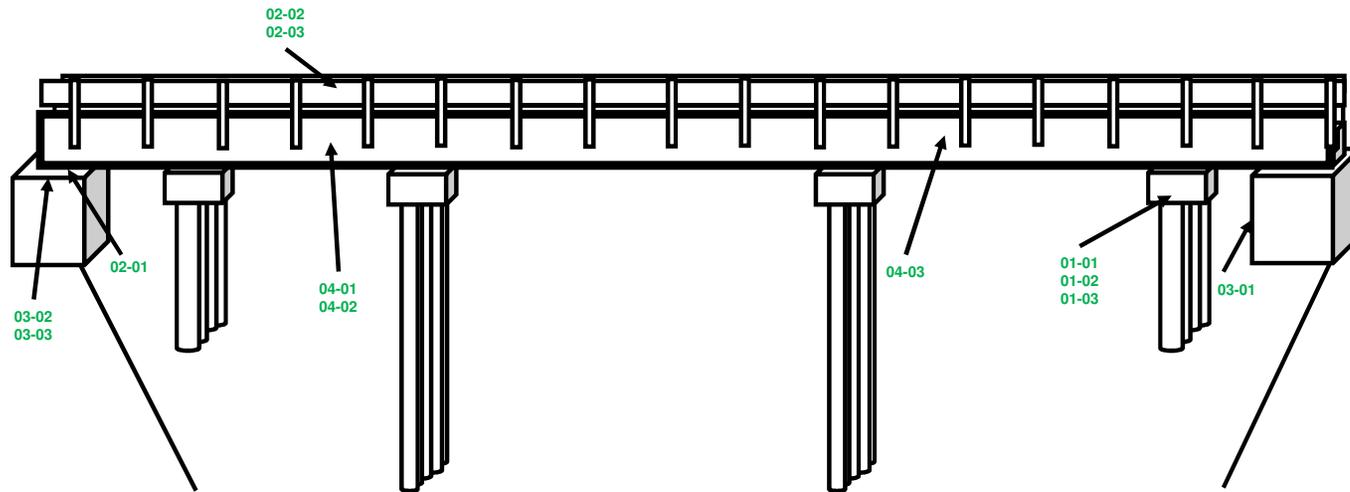
**Asbestos Sample Locations**

**LEGEND:**

- XX-XX Sample Negative
- ▲ Sample Positive
- Sample <1%

**NOTES:**

- Not to scale





**Anderson County Emergency  
Bridge Package**

**Timms Mill Road & Six and  
Twenty Creek**

Pendleton, SC  
Project No. 49-10398

**Lead Sample Locations**

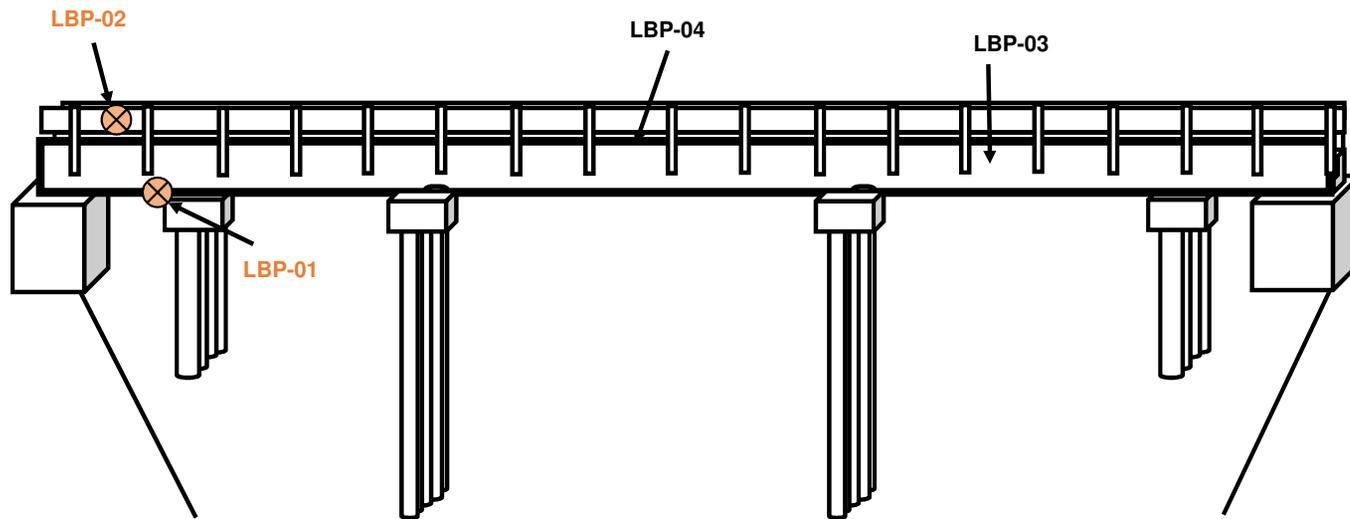
LEGEND:

XX-XX Lead < 0.5% by weight

⊗ Lead > 0.5% by weight

NOTES:

- Not to scale



# **Appendix II: Site Photographs**



1 - View of the bridge crossing Six & Twenty Creek along Timms Mill Road



2 - View of the damaged bridge



3 - View of the bridge



4 - View of the bridge in a collapsed area



5 - View of a collapsed section of the bridge



6 - View of felt above the cross girders



7 - View below the bridge



8 - View of felt at the top of the columns



9 - View of felt above the cross girders



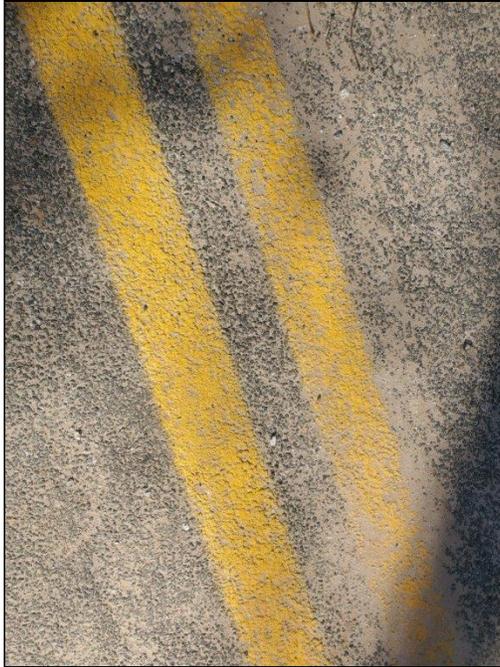
10 - View of orange paint on brackets



11 - View of a cross section of the bridge



12 - View of bolts and guardrail supports



13 - View of yellow paint on the road surface



14 - View of white paint on the road surface

# **Appendix III: Asbestos Bulk Sample Results**



EMSL ANALYTICAL, INC.  
LABORATORY • PRODUCTS • TRAINING

# Asbestos Bulk Building Material Chain of Custody

**EMSL Order Number** *(lab use only):*

412002672

Pineville, NC 28134  
Phone (704) 525-2205  
Fax (704) 525-2382

<b>Company Name :</b> ECS Southeast, LLP		<b>EMSL Customer ID:</b>	
<b>Street:</b> 1200 Woodruff Road, Suite H-12		<b>City:</b> Greenville	<b>State or Province:</b> SC
<b>Zip/Postal Code:</b> 29607	<b>Country:</b> US	<b>Telephone #:</b> 864-404-8844	<b>Fax #:</b>
<b>Report To (Name):</b> Matthew Wilbanks		<b>Please Provide Results via:</b> <input type="checkbox"/> Fax <input type="checkbox"/> Email	
<b>email Address:</b> mwilbanks@ecslimited.com		<b>Purchase Order Number:</b> 49-11398	
<b>Client Project ID:</b> Anderson County Bridge/11398		<b>EMSL Project ID</b> <i>(internal use only):</i>	
<b>State or Province Collected:</b> SC		<b>CT only</b> <input type="checkbox"/> <b>Commercial/Taxable</b> <input type="checkbox"/> <b>Residential/Tax Exempt</b> <input type="checkbox"/>	
<b>EMSL-Bill to:</b> <input type="checkbox"/> Same <input checked="" type="checkbox"/> Different - <i>If bill to is different note instructions in comment. Third party billing requires written authorization from third party</i>			
<b>Turnaround Time (TAT) Options Please Check</b>			
<input type="checkbox"/> 3 Hour	<input type="checkbox"/> 6 Hour	<input type="checkbox"/> 24 Hour	<input type="checkbox"/> 32 Hour* <input type="checkbox"/> 48 Hour <input checked="" type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week
* 32 Hour TAT available for select tests only; samples must be submitted by 11:30am. Please call ahead for large projects and/or turnaround times 6 hours or less.			
<b>PLM - Bulk (reporting limit)</b>		<b>TEM - Bulk</b>	
<input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (<1%)		<input checked="" type="checkbox"/> TEM EPA NOB - EPA 600/R-93/116 Section 2.5.5.1	
<input type="checkbox"/> PLM EPA NOB (<1%)		<input type="checkbox"/> NY ELAP Method 198.4 non-friable - NY	
<b>Point Count</b> <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%)		<input type="checkbox"/> Chatfield Protocol (semi-quantitative)	
Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%)		<input type="checkbox"/> TEM % by Mass - EPA 600/R-93/116 Section 2.5.5.2	
<input type="checkbox"/> NIOSH 9002 (<1%)		<input type="checkbox"/> TEM Qualitative via Filtration Prep Technique	
<input type="checkbox"/> NY ELAP Method 198.1- friable - NY		<input type="checkbox"/> TEM Qualitative via Drop Mount Prep Technique	
<input type="checkbox"/> NY ELAP Method 198.6 NOB- non-friable - NY		<b>Other tests (please specify)</b>	
<input type="checkbox"/> NY ELAP Method 198.8- Vermiculite Surfacing Material		<input type="checkbox"/>	
<input type="checkbox"/> OSHA ID-191 Modified			
<input type="checkbox"/> EMSL Standard Addition Method			
<input checked="" type="checkbox"/> <b>Positive Stop - Clearly Identify Homogenous Areas (HA)</b>		<b>Date Sampled:</b> 3/12/20	
<b>Sampler's Name:</b> MATTHEW WILBANKS		<b>Sampler's Signature:</b> <i>Matt Wilbanks</i>	
<b>Sample #</b>	<b>HA #</b>	<b>Sample Location</b>	<b>Material Description</b>
* 01,02,03 <del>000770</del>	01	TOP OF COLUMNS	FELT
* 01,02,03	02	CROSS GIRDERS	FELT UNDERLAYMENT
01,02,03	03	THROUGHOUT	CONCRETE
* 01,02,03	04	EXPANSION JOINTS	BLACK TAR
<b>Client Sample # (s):</b> 01-01 - 04-03		<b>Total # of Samples:</b> 12	
<b>Relinquished by (Client):</b> <i>Matt Wilbanks</i>		<b>Date:</b> 3/12/20	<b>Time:</b> 16:00 FEDEX
<b>Received by (Lab):</b> <i>Kyle Nelson</i>		<b>Date:</b> 3/13/20	<b>Time:</b> 9:30AM FK
<b>Comments/Special Instructions:</b>		7958 3969 4056	
Bill To: ECS Southeast, LLP, 1200 Woodruff Road, Suite H-12, Greenville, SC, 29607, US			
Attention: Matt Wilbanks Phone: 864-404-8844 Email: mwilbanks@ecslimited.com Purchase Order: 49-11398			

\* IF NEGATIVE BY PLM, ANALYZE SAMPLE 03 VIA TEM



# EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

Tel/Fax: (704) 525-2205 / (704) 525-2382

<http://www.EMSL.com> / [charlottelab@emsl.com](mailto:charlottelab@emsl.com)

EMSL Order: 412002672

Customer ID: ENCS55

Customer PO: 49-11398

Project ID:

**Attention:** Matthew Wilbanks  
ECS Southeast, LLP  
1200 Woodruff Road  
Suite H-12  
Greenville, SC 29607

**Project:** Anderson County Bridge/11398

**Phone:** (864) 987-1610

**Fax:** (864) 987-1615

**Received Date:** 03/13/2020 9:30 AM

**Analysis Date:** 03/17/2020 - 03/18/2020

**Collected Date:** 03/12/2020

## 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
01-01 <small>412002672-0001</small>	Top of Columns - Felt	Black Non-Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
01-02 <small>412002672-0002</small>	Top of Columns - Felt	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
02-01 <small>412002672-0003</small>	Cross Girders - Felt Underlayment	Various/Black Non-Fibrous Homogeneous	5% Cellulose	5% Quartz 5% Ca Carbonate 5% Mica 80% Non-fibrous (Other)	None Detected
02-02 <small>412002672-0004</small>	Cross Girders - Felt Underlayment	Black Non-Fibrous Homogeneous	5% Cellulose	5% Quartz 5% Ca Carbonate 85% Non-fibrous (Other)	None Detected
03-01 <small>412002672-0005</small>	Throughout - Concrete	Gray Non-Fibrous Homogeneous		20% Quartz 8% Ca Carbonate 72% Non-fibrous (Other)	None Detected
03-02 <small>412002672-0006</small>	Throughout - Concrete	Gray Non-Fibrous Homogeneous		30% Quartz 8% Ca Carbonate 62% Non-fibrous (Other)	None Detected
03-03 <small>412002672-0007</small>	Throughout - Concrete	Gray/Tan Non-Fibrous Homogeneous		30% Quartz 10% Ca Carbonate 60% Non-fibrous (Other)	None Detected
04-01 <small>412002672-0008</small>	Expansion Joints - Black Tar	Black Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
04-02 <small>412002672-0009</small>	Expansion Joints - Black Tar	Black Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected

Analyst(s)

Eric Loomis (5)

James Kincheloe (4)

Lee Plumley, Laboratory Manager  
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. 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. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Pineville, NC NVLAP Lab Code 200841-0, VA 3333 00312

Initial report from: 03/18/2020 14:33:50



# EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

Tel/Fax: (704) 525-2205 / (704) 525-2382

<http://www.EMSL.com> / [charlottelab@emsl.com](mailto:charlottelab@emsl.com)

<b>EMSL Order:</b> 412002672
<b>Customer ID:</b> ENCS55
<b>Customer PO:</b> 49-11398
<b>Project ID:</b>

<b>Attention:</b> Matthew Wilbanks ECS Southeast, LLP 1200 Woodruff Road Suite H-12 Greenville, SC 29607	<b>Phone:</b> (864) 987-1610 <b>Fax:</b> (864) 987-1615 <b>Received Date:</b> 03/13/2020 9:30 AM <b>Analysis Date:</b> 03/19/2020 <b>Collected Date:</b> 03/12/2020
<b>Project:</b> Anderson County Bridge/ 11398	

## 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
01-03 412002672-0010	Top of Columns - Felt	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
02-03 412002672-0011	Cross Girders - Felt Underlayment	Black Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
04-03 412002672-0012	Expansion Joints - Black Tar	Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)

Derrick Young (3)

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. Pineville, NC

Initial report from: 03/19/2020 15:08:52

# **Appendix IV: Lead Laboratory Analytical Results**



# Lead (Pb) Chain of Custody

EMSL Order ID (Lab Use Only):

Pineville, NC 28134  
PHONE: (704) 525-2205  
FAX: (704) 525-2382

EMSL ANALYTICAL, INC.  
LABORATORY • PRODUCTS • TRAINING

412002679

Company: ECS Southeast, LLP		EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different <small>If Bill to is Different note instructions in Comments**</small>		
Street: 1200 Woodruff Road, Suite H-12		<i>Third Party Billing requires written authorization from third party</i>		
City: Greenville	State/Province: SC	Zip/Postal Code: 29607	Country: US	
Report To (Name): Matt Wilbanks		Telephone #: 864-404-8844		
Email Address: mwilbanks@ecslimited.com		Fax #:	Purchase Order: 49-11398	
Project Name/Number: Anderson County Bridge/11398		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email		
U.S. State Samples Taken: SC		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt		
<b>Turnaround Time (TAT) Options* - Please Check</b>				
<input type="checkbox"/> 3 Hour	<input type="checkbox"/> 6 Hour	<input type="checkbox"/> 24 Hour	<input type="checkbox"/> 48 Hour <input checked="" type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week	
<small>*Analysis completed in accordance with EMSL's Terms and Conditions located in the Price Guide</small>				
<b>Matrix</b>	<b>Method</b>	<b>Instrument</b>	<b>Reporting Limit</b>	<b>Check</b>
Chips <input checked="" type="checkbox"/> % by wt. <input type="checkbox"/> mg/cm <sup>2</sup> <input type="checkbox"/> ppm (mg/kg)	SW846-7000B	Flame Atomic Absorption	0.01%	<input checked="" type="checkbox"/>
Air	NIOSH 7082	Flame Atomic Absorption	4 µg/filter	<input type="checkbox"/>
	NIOSH 7105	Graphite Furnace AA	0.03 µg/filter	<input type="checkbox"/>
	NIOSH 7300M/NIOSH 7303	ICP-OES	0.5 µg/filter	<input type="checkbox"/>
Wipe* <span style="margin-left: 20px;">ASTM <input type="checkbox"/> non ASTM <input type="checkbox"/></span> <small>*if no box checked, non-ASTM Wipe assumed</small>	SW846-7000B	Flame Atomic Absorption	10 µg/wipe	<input type="checkbox"/>
	SW846-6010B or C	ICP-OES	1.0 µg/wipe	<input type="checkbox"/>
TCLP	SW846-1311/7000B/SM 3111B	Flame Atomic Absorption	0.4 mg/L (ppm)	<input type="checkbox"/>
	SW846-1311/SW846-6010B or C	ICP-OES	0.1 mg/L (ppm)	<input type="checkbox"/>
SPLP	SW846-1312/7000B/SM 3111B	Flame Atomic Absorption	0.4 mg/L (ppm)	<input type="checkbox"/>
	SW846-1312/SW846-6010B or C	ICP-OES	0.1 mg/L (ppm)	<input type="checkbox"/>
TTLC	22 CCR App. II, 7000B/7420	Flame Atomic Absorption	40 mg/kg (ppm)	<input type="checkbox"/>
	22 CCR App. II, SW846-6010B or C	ICP-OES	2 mg/kg (ppm)	<input type="checkbox"/>
STLC	22 CCR App. II, 7000B/7420	Flame Atomic Absorption	0.4 mg/L (ppm)	<input type="checkbox"/>
	22 CCR App. II, SW846-6010B or C	ICP-OES	0.1 mg/L (ppm)	<input type="checkbox"/>
Soil	SW846-7000B	Flame Atomic Absorption	40 mg/kg (ppm)	<input type="checkbox"/>
	SW846-6010B or C	ICP-OES	2 mg/kg (ppm)	<input type="checkbox"/>
Wastewater <span style="margin-left: 20px;">Unpreserved <input type="checkbox"/> Preserved with HNO<sub>3</sub> pH &lt; 2 <input type="checkbox"/></span>	SM3111B/SW846-7000B	Flame Atomic Absorption	0.4 mg/L (ppm)	<input type="checkbox"/>
	EPA 200.9	Graphite Furnace AA	0.003 mg/L (ppm)	<input type="checkbox"/>
	EPA 200.7	ICP-OES	0.020 mg/L (ppm)	<input type="checkbox"/>
Drinking Water <span style="margin-left: 20px;">Unpreserved <input type="checkbox"/> Preserved with HNO<sub>3</sub> pH &lt; 2 <input type="checkbox"/></span>	EPA 200.8	ICP-MS	0.001 mg/L (ppm)	<input type="checkbox"/>
	EPA 200.9	Graphite Furnace AA	0.003 mg/L (ppm)	<input type="checkbox"/>
	EPA 200.5	ICP-OES	0.003 mg/L (ppm)	<input type="checkbox"/>
TSP/SPM Filter	40 CFR Part 50	ICP-OES	12 µg/filter	<input type="checkbox"/>
	40 CFR Part 50	Graphite Furnace AA	3.6 µg/filter	<input type="checkbox"/>
Other:				<input type="checkbox"/>
Name of Sampler: <u>MATTHEW WILBANKS</u>		Signature of Sampler: <u><i>Matthew Wilbanks</i></u>		
Sample #	Location	Volume/Area	Date/Time Sampled	
LBP-01	ORANGE ON METAL BRACKETS			
LBP-02	WHITE ON ROADWAY			
Client Sample #s	LBP-01- LBP-04		Total # of Samples: 4	
Relinquished (Client):	<u><i>Matthew Wilbanks</i></u>	Date: <u>3/12/20</u>	Time: <u>16:00</u>	
Received (Lab):	<u><i>Kyle Nelson</i></u>	Date: <u>3/13/20</u>	Time: <u>9:30AM Fk</u>	
Comments: <span style="float: right;">7958 3969 4056</span>				





**EMSL Analytical, Inc.**

10801 Southern Loop Blvd, Pineville, NC 28134  
Phone/Fax: (704) 525-2205 / (704) 525-2382  
<http://www.EMSL.com> [charlottelab@emsl.com](mailto:charlottelab@emsl.com)

EMSL Order: 412002679  
CustomerID: ENCS55  
CustomerPO: 49-11398  
ProjectID:

Attn: **Matthew Wilbanks**  
**ECS Southeast, LLP**  
**1200 Woodruff Road**  
**Suite H-12**  
**Greenville, SC 29607**

Phone: (864) 987-1610  
Fax: (864) 987-1615  
Received: 03/13/20 9:30 AM  
Collected:

Project: **Anderson County Bridge/ 11398**

**Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)\***

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Weight</i>	<i>Lead Concentration</i>
LBP-01	412002679-0001	3/16/2020		0.3136 g	60 % wt
Site: Orange on Metal Brackets					
LBP-02	412002679-0002	3/16/2020		0.2801 g	<0.0080 % wt
Site: White on Roadway					
LBP-03	412002679-0003	3/16/2020		0.3712 g	<0.0080 % wt
Site: Yellow on Roadway					
LBP-04	412002679-0004	3/16/2020		0.309 g	0.72 % wt
Site: Silver Guardrail Coating					

Kyle Collins, Technical Manager  
or other approved signatory

\*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.008 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. When the information supplied by the customer can affect the validity of the results, it will be noted on the report. "<" (less than) result signifies the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.  
Samples analyzed by EMSL Analytical, Inc. Pineville, NC AIHA-LAP, LLC - ELLAP 192283

Initial report from 03/16/2020 13:04:46

# **Appendix V: Certifications/ Licenses**

**SCDHEC ISSUED**  
Asbestos ID Card

**Matthew J Wilbanks**



**AIRSAMPLER AS-00558**  
**CONSULTBI BI-01688**

Expiration Date:  
**12/03/20**  
**12/04/20**