



LEAD-BASED PAINT INVESTIGATION REPORT

SOUTHBOUND I-95 OVER LAKE MARION OVERFLOW BRIDGE
CLARENDON & ORANGEBURG COUNTIES, SOUTH CAROLINA

PREPARED FOR:

The logo for TRANSYSTEMS. The word 'TRANSYSTEMS' is in a bold, blue, sans-serif font. The letter 'A' is stylized with a blue triangle pointing upwards from its center.

C/O Mr. Peter Strub
Sr. Vice President/Principal
1859 Summerville Avenue, Suite 600
Charleston, SC 29405

PREPARED BY:

F&ME Consultants, Inc.
211 Business Park Blvd.
Columbia, South Carolina 29203

August 18, 2023

Yes, LBP was found.
 No, LBP was not found.

FME Project No.: G6744.000

TABLE OF CONTENTS

1.	Executive Summary.....	1
2.	Lead-Based Paint Background Information.....	3
3.	Introduction.....	3
4.	Investigation Procedures and Results.....	3
5.	Recommemndations.....	4
	APPENDICES.....	5

Appendix A – Site Vicinity Map

Appendix B – General Bridge Plan

Appendix C – Site Photographs

Appendix D – EPA LBP Inspector Certification



1 EXECUTIVE SUMMARY

This executive summary is intended as an overview for the convenience of the reader. This report should be reviewed in its entirety prior to making any decisions regarding this project. This investigation report is one of seven (7) completed for the project. The investigations included the existing north and southbound I-95 bridge structures, the former US 301/15 Trail Bridges, and the older remnants of the US 301 bridge. The below Bridge numbering system utilized for the investigations and referenced in this report reflects the numbering system developed by F&ME Consultants, Inc. (FME) field personnel during the field investigation and does not reflect any Bridge numbering system used by The South Carolina Department of Transportation (SCDOT). This report is specifically for the southbound I-95 Overflow Bridge only. Refer to other reports prepared by FME for the other bridges.

F&ME Consultants, Inc. (FME) has completed a Lead-Based Paint (LBP) investigation the existing southbound I-95 Overflow Bridge over Lake Marion (Bridge #4) in Clarendon and Orangeburg Counties in South Carolina, at the request of Transystems (Client). The purpose of the investigation was to locate, identify and test components of the Bridge that are painted or coated with LBP. The field investigations were performed on July 21, 2023, in anticipation of the off-alignment replacement of the existing I-95 southbound Bridge. Refer to Appendix A, Site Vicinity Map is provided to show the location of the Bridge. Appendix B, General Bridge Plan, is provided to show the lay-out of the Bridge.

Per an agreed upon scope of work, this LBP Investigation was conducted to identify accessible Bridge components that have been painted or coated with lead-containing materials that have concentrations greater than or equal (\geq) to the regulatory limit of 0.7 mg/cm². This investigation includes both a visual evaluation of the physical condition of painted materials as well as quantitative testing of surfaces using an X-Ray Fluorescence (XRF) LBP analyzer. The XRF documents the concentration of lead, if any, in the overall paint or coating. Bridge components were scanned with a Viken XRF analyzer (Model # Pb200i, Serial #1888, Reference Date: 11/01/22) with a limit of detection (LOD) of 0.1 mg/cm².

LBP is regulated by multiple government agencies, and each requires different response actions when the concentration of lead exceeds specified thresholds. The Occupational Safety and Health Administration (OSHA) regulates worker exposure to lead dust, and as a result considers materials with any lead content to be a potential hazard. Additionally, South Carolina Department of Health and Environmental Control (SCDHEC) requires some waste materials to be disposed of at specific disposal facilities that are able to manage this waste.

There were no painted and/or coated bridge components noted during this investigation of the subject Bridge. Therefore, no XRF scans were required during this investigation.



We appreciate the opportunity to assist you in this project. If you have any questions or require additional information, please feel free to contact our office at (803) 254-4540.

Sincerely,

F&ME CONSULTANTS



Michael S. Mincey

SC Lead Based Paint Inspector

EPA Certification No. LBP-I-1198708-2 (Exp. 2/21/25)



Glynn M. Ellen

Environmental Department Manager

2 LEAD-BASED PAINT BACKGROUND INFORMATION

Housing and Urban Development (HUD) defines “LBP” as any coating that has a lead concentration of 1.0 milligrams of lead per square centimeter (1.0 mg/cm²) or greater, or if the lead concentration is greater than one half of a percent (> 0.5%) by weight. The Consumer Product Safety Commission (CPSC) currently considers paint to be lead-containing if the concentration of lead exceeds 90 ppm (0.009% by weight). In 1978, the CPSC banned the sale of LBP to consumers, and banned its application in areas where consumers have direct access to painted surfaces. Both the CPSC and HUD definitions of lead-containing paint are aimed at protecting the general population from exposure to lead in residential settings.

In contrast, the mission of OSHA with respect to lead-containing paint is to protect workers during construction activities that may generate elevated airborne lead concentrations. OSHA states that construction work (including renovation, maintenance, and demolition) carried-out on structures coated with paint having lead concentrations lower than the HUD or CPSC can still result in airborne lead concentrations in excess of regulatory limits. For this reason, OSHA has not defined lead-containing paint, but states that paint having any measurable level of lead may pose a substantial exposure hazard during construction work, depending upon the work performed. Therefore, in these situations, OSHA guidelines and safety procedures should be followed. By OSHA standards and regulations, the employer shall ensure that no employee is exposed to lead at concentrations greater than fifty micrograms per cubic meter of air (50 ug/m³) averaged over an 8-hour period.

Additionally, SCDHEC requires the use of specific waste disposal sites if materials contain lead concentrations greater than or equal to (\geq) 0.7 mg/cm². Due to the anticipated demolition of the Bridge structures, the SCDHEC lead disposal requirements were used as a threshold.

3 INTRODUCTION

The existing Bridge is located along I-95 and crosses over Lake Marion in Clarendon and Orangeburg Counties in South Carolina. The date of construction for the existing southbound I-95 Bridge (Bridge #4) over Lake Marion were constructed in the late 1960’s to early 1970’s based on the original construction drawings.

The southbound I-95 Lake Marion Overflow (Bridge #4) (~350.0’ L x 31.0’W inside curb to inside curb) is two (2) lane, concrete and steel bridge structure with poured-in-place concrete bridge decking, concrete curb/gutter,

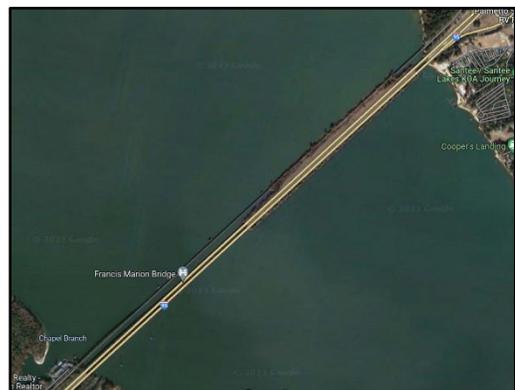


Photo 1 – Southbound I-95 over Lake Marion Overflow Bridge in Clarendon & Orangeburg Counties, SC.

and concrete guardrails along with metal scuppers. The Bridge is constructed with a pre-cast prestressed beams and poured-in-place (PIP) diaphragms. The bentcaps were PIP concrete supported by driven hexagonal concrete piles.

4 INVESTIGATION PROCEDURES AND RESULTS

FME's LBP Investigation sampling protocol consisted of randomly selecting bridge components and scanning them with a Viken X-Ray Fluorescence (XRF) Portable Analyzer (Model # Pb200i, Serial #1888).

There were no painted and/or coated bridge components noted during this investigation of the subject Bridge. Therefore, no XRF scans were required during this investigation.

5 RECOMMENDATIONS

The results of this LBP investigation determined that there are no lead-based paints or coatings associated with the subject Bridge. During the bridge demolition activities, some painted surfaces may be uncovered. If painted bridge components are uncovered, testing should be conducted if they contain levels of lead ≥ 0.7 mg/cm². If found to be lead containing, the coated/painted components will need to be handled and disposed of properly. Proper handling includes the avoidance of creating lead dust, as well as the creation of lead-contaminated soil hazards. Activities that would generate lead dust include abrasion, scraping, or sanding. As previously stated, OSHA has not defined lead-containing paint, but states that paint having any measurable level of lead may pose a substantial exposure hazard during construction work, depending upon the work performed. In these cases, OSHA regulations and procedures should be followed to protect the personnel carrying out the work on a bridge component containing any amount of lead.

If any hidden and/or inaccessible materials suspected or known to contain lead-based paint are encountered during any bridge demolition activities, the persons involved are advised to stop work, follow proper regulatory precautions and procedures, and notify FME for an immediate response action.

We sincerely appreciate the opportunity to be of service to Transystems on this project. If you have any questions regarding the information presented herein, please contact our office at (803) 254-4540.



APPENDICES

Appendix A – Site Vicinity Map

Appendix B – General Bridge Plan

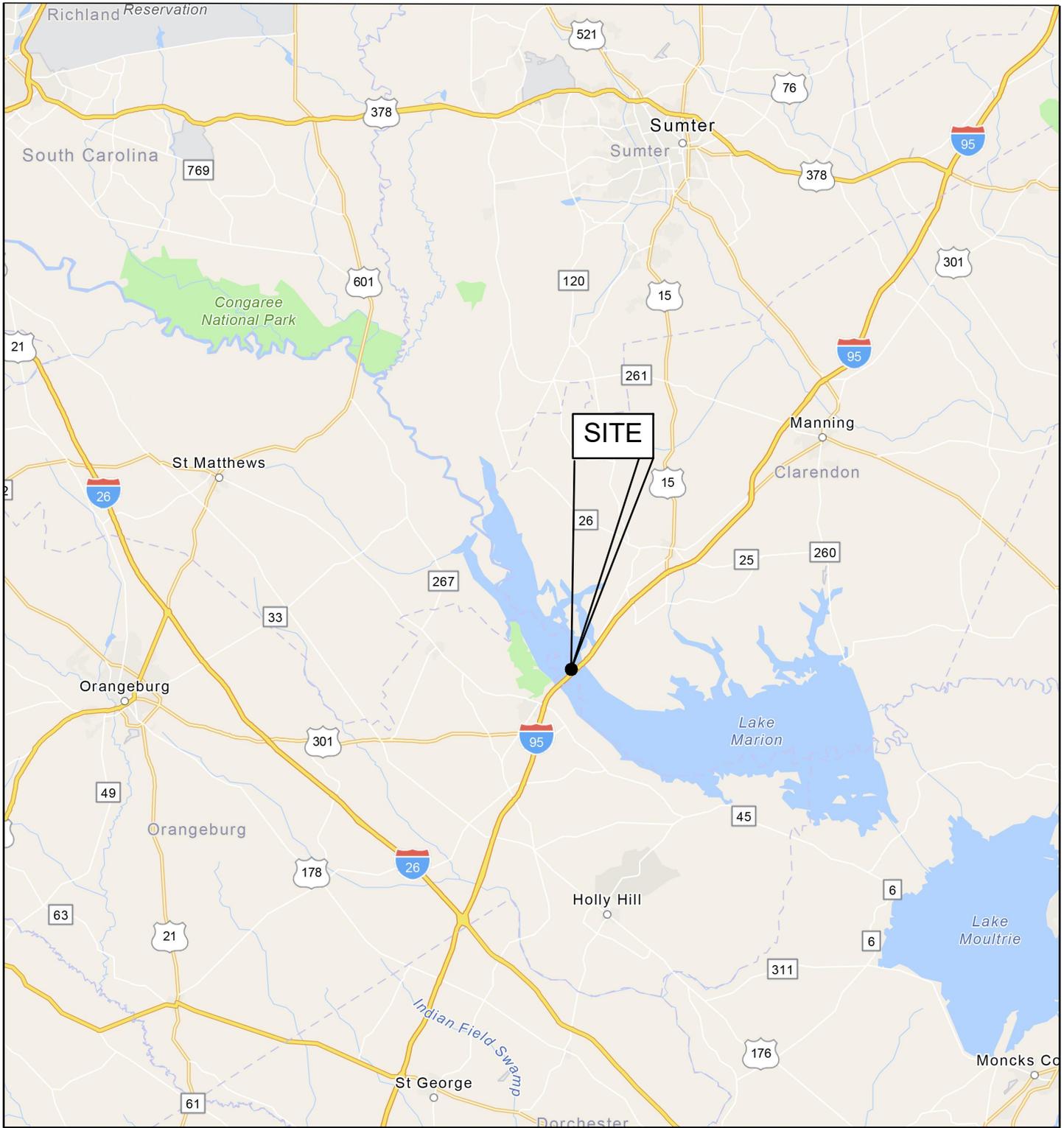
Appendix C – Site Photos

Appendix D – EPA LBP Inspector Certification



Appendix A

Site Vicinity Map



1:577,791

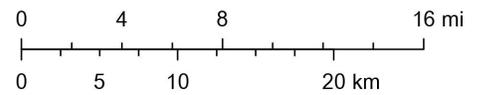


FIGURE NUMBER:

1

F&ME CONSULTANTS PROJECT NUMBER:

G6744.000

LEAD-BASED PAINT INVESTIGATION
SB I-95 over Lake Marion Overflow Bridge Replacement
Clarendon & Orangeburg Counties, South Carolina

SITE VICINITY MAP

Prepared for:
Transystems
1859 Summerville Ave., Suite 600
Charleston, SC 29405



211 BUSINESS PARK BLVD.
COLUMBIA, SC 29203

ORIGINAL:
August 11, 2023

REVISIONS:

- 1 _____
- 2 _____
- 3 _____

SCALE:
Shown

DRWN. BY: MSM
CHKD. BY: MSM
APPR. BY: GME

NOTES:

- _____
- _____
- _____
- _____

Appendix B

General Bridge Plan



I-95 (SBL) over Lake Marion Overflow (Bridge #4)

F&ME CONSULTANTS
F&ME CONSULTANTS, INC.
COLUMBIA, SC

4			
3			
2			
1			
REV.	BY	DATE	DESCRIPTION OF REVISION
TOPO.		DATE	
DWG.	MSM	DATE 08/11/2023	GROUP
R/W		DATE	

SB I-95 OVER LAKE MARION OVERFLOW BRIDGE REPLACEMENT
CLARENDON & ORANGEBURG COUNTIES, SOUTH CAROLINA

SAMPLE LOCATION PLAN

F&ME JOB NO. G6744.000

SCALE: N.T.S. FIGURE 2

Appendix C

Site Photographs



Photo 1. Top Side View of Bridges.



Photo 2. Southwest Corner View of SB I-95 Overflow Bridge #4.



Photo 3. Underside View of SB I-95 NBL Overflow Bridge #4.



Photo 4. View of South End Bent.



Appendix D

EPA LBP Inspector Certification

United States Environmental Protection Agency

This is to certify that



Michael S Mincey

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226 as:

Inspector

In the Jurisdiction of:

All EPA Administered Lead-based Paint Activities Program States, Tribes and Territories

This certification is valid from the date of issuance and expires February 21, 2025

LBP-I-1198708-2

Certification #

January 05, 2022

Issued On



A handwritten signature in black ink, appearing to read 'Adrienne Priselac'.

Adrienne Priselac, Manager, Toxics Office

Land Division