

LEAD BASED PAINT INVESTIGATION REPORT

US-15 RBO INDIAN FIELD SWAMP CULVERT
PO 37127
DORCHESTER COUNTY, SOUTH CAROLINA

PREPARED FOR:



SCDOT
C/O Trapp Harris
955 Park Street
Columbia, South Carolina 29201

PREPARED BY:

F&ME Consultants
1825 Blanding Street
Columbia, South Carolina 29201

October 16, 2019

☐ Yes, lead was found.
☒ No, lead was not found.

F&ME Project No.: G6100.120

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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.

F&ME Consultants (FME) has completed a Lead-Based Paint (LBP) Investigation on the culvert associated with the US-15 RBO Indian Field Swamp in Dorchester County, South Carolina. The investigation was performed on October 4, 2019 in anticipation of an on-alignment replacement of the existing culvert structure. Appendix A – Site Vicinity Map is provided to show the location of the culvert. Appendix B – Culvert Plan, is provided to show the culvert lay-out.

The scope of this LBP Investigation was to identify, analyze and assess the condition of LBP or coated culvert components that may be affected by the culvert replacement. This scope includes a visual evaluation of the physical condition of painted materials as well as quantitative testing of random suspect surfaces using an X-Ray Fluorescence (XRF) Portable Analyzer of any painted materials found on the structure. The XRF documents the concentration of lead, if any, in the overall paint or coating. Culvert components were scanned with a Heuresis XRF analyzer (Model # Pb200i, Serial #1888, Reference Date: 07/11/18) 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. Furthermore, the South Carolina Department of Health and Environmental Control (SCDHEC) requires some materials found to contain greater than or equal to (\geq) 0.7 mg/cm² lead to be disposed of at specialized waste facilities.

The results from the visual inspection of the culvert indicate that **there are no LBP components found to be associated with the culvert.**

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

Sincerely,

F&ME CONSULTANTS



Timothy O Ross

S.C. Lead-Based Paint Inspector

EPA Certification No. SC-I-198705-1 (Exp. 02/21/22)



Glynn M. Ellen

Environmental Department Manager



2. LBP 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/cm^2) 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 the residential setting.

In contrast, the mission of the Occupational Safety and Health Administration (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 ($\geq 0.01 \text{ mg/cm}^2$) 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/m^3) averaged over an 8-hour period.

Additionally, the South Carolina Department of Health and Environmental Control (SCDHEC) requires the use of specialized waste disposal sites if materials contain lead concentrations greater than or equal to (\geq) 0.7 mg/cm^2 . It is imperative that these regulations be considered if any present or future replacement and/or demolition activities will impact LBP-containing culvert components.

3. INTRODUCTION

FME has completed a Lead-Based Paint (LBP) Investigation on the culvert associated with the US-15 RBO Indian Field Swamp in Dorchester County, South Carolina. The scope of this LBP Investigation was to identify, analyze, and assess the condition of LBP or coated culvert components that may be affected by the culvert replacement activities. This investigation was performed on October 9, 2019 in anticipation of an on-alignment replacement of the existing culvert structure.

The results, conclusions and recommendations from this investigation are representative of the conditions observed at the site on the date of the field inspection. FME does not assume responsibility for any changes in conditions or circumstances that occur after the inspection. Use of this document for bidding purposes is not recommended without prior consultation with FME. No other environmental issues are addressed in this report.



4. INVESTIGATION RESULTS

The existing culvert structure (~23.0'L x 32.2'W, inside curb to inside curb), is located on US-15 and crosses over Indian Field Swamp in Dorchester County, South Carolina. The date of construction of the culvert (SCDOT bridge # 182001501101) is noted on the National Bridge Inventory Database as 1929 with an expansion noted to have occurred in 1938. The existing culvert structure is a one (1) span, two lane cast in place concrete culvert, with an asphalt overlay. The bridge deck rests on concrete wing walls. No drainage supports were noted on either side of the culvert. Precast concrete guardrails were also noted. Two (2) utility conduits



Photo 1 – Culvert associated with US-15 RBO Indian Field Swamp, Dorchester County, South Carolina.

were attached on the east side of the culvert deck, and one (1) utility conduit was attached on the west side of the culvert deck. Refer to Appendix A – Site Vicinity Map, for the location of the structure.

The visual inspection portion of our LBP Investigation determined that there were **no visible suspect surfaces to be sampled that were associated with the culvert**. Appendix C - Personnel Certification provides the LBP certifications for FME personnel.

5. RECOMMENDATIONS

The results of this LBP investigation determined that there were no visible lead-based paints or coatings found on the culvert. During the culvert demolition activities, some painted surfaces may be exposed. If paint is exposed and it is determined to contain levels of lead ≥ 0.7 mg/cm², 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 culvert component containing any amount of lead.

SCDHEC regulates the proper disposal of LBP and associated debris. SCDHEC defines two types of LBP debris. The first is LBP *waste*, which is defined as material such as wood, brick and metal that is painted with LBP. The other is LBP *residue* which is defined as residue that is generated from the removal (e.g., scraped, chipped, sandblasted, or chemical) of LBP from a structure. LBP *waste* that comes from a commercial or residential facility may be disposed of in either a class 2 or 3 landfill, while LBP *residue* from a commercial facility must have a toxicity characteristic leaching procedure (TCLP) analysis to determine the lead content. TCLP analysis is used to determine whether or not a



waste is a characteristic hazardous waste due to leachability under the South Carolina Hazardous Waste Management Regulations. LBP *residue* with a TCLP analysis result greater than or equal to five milligrams per liter (≥ 5 mg/l) lead must be disposed of in a Subtitle C landfill (Hazardous Waste). However, LBP *residue* from a commercial facility with a TCLP analysis result less than five milligrams per liter (< 5 mg/l) lead is required to be disposed of in a Class 3 landfill.

If any hidden and/or inaccessible materials suspected or known to contain lead-based paint are encountered during any culvert demolition activities, the persons involved are advised to stop work, follow proper regulatory precautions and procedures, and notify FME for an immediate response action. If you have any questions or require additional information concerning this report, please do not hesitate to contact our office at (803)254-4540. We appreciate the opportunity to be of service in this matter.

This report has been prepared exclusively for SCDOT by FME and shall not be disseminated in whole or part to other parties without prior consent from SCDOT or FME. Use of this document for bidding purposes is not recommended without prior consultation with FME.



APPENDICES

Appendix A – Site Vicinity Map

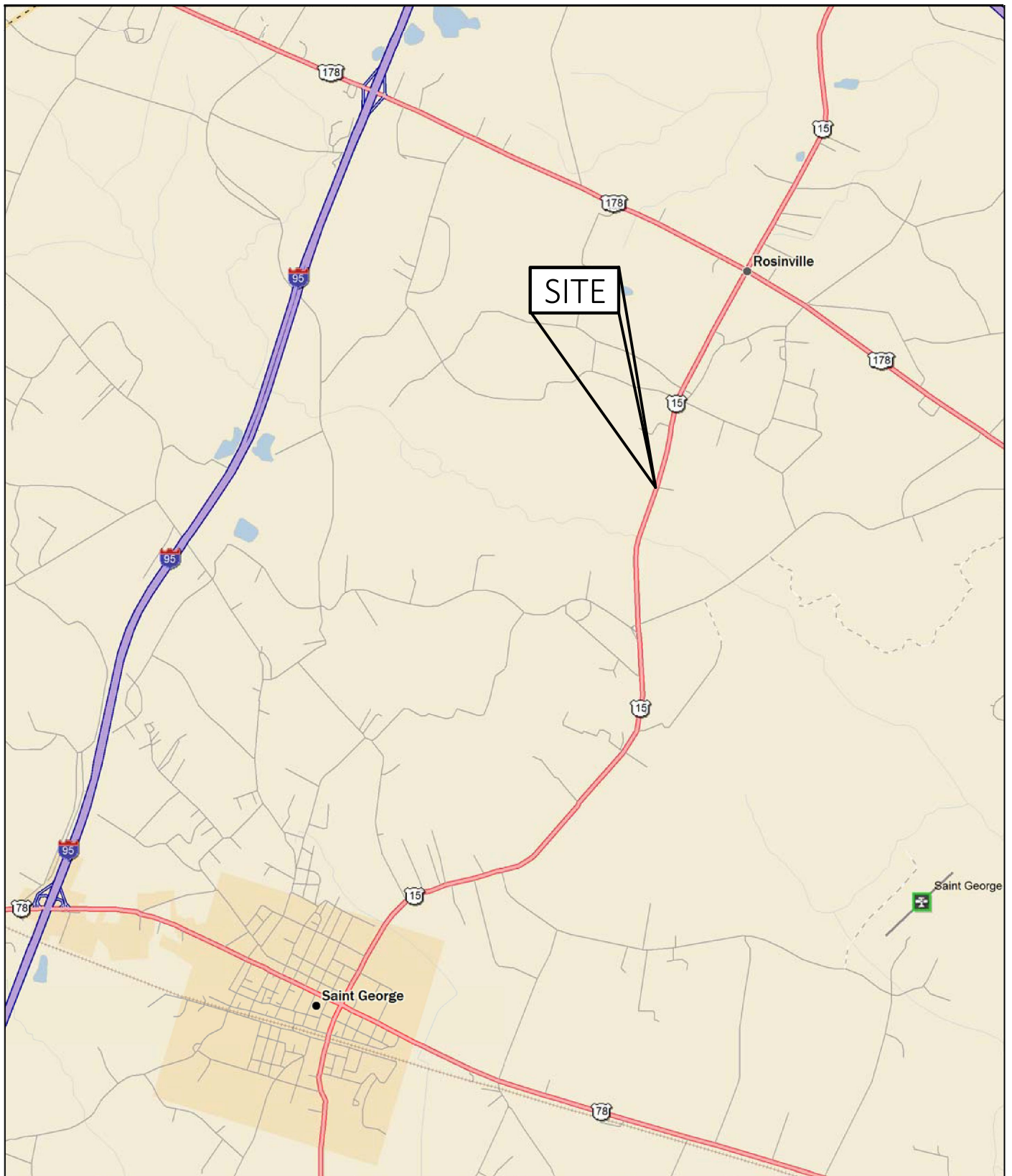
Appendix B – Culvert Plan

Appendix C – Personnel Certification



Appendix A

Site Vicinity Map



Data use subject to license.

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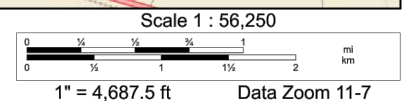
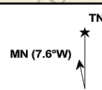


FIGURE
NUMBER:

1

F&ME CONSULTANTS
PROJECT NUMBER:

G6100.120

LEAD-BASED PAINT INVESTIGATION
US-15 Culvert over Indian Field Swamp
Dorchester County, SC
Site Vicinity Map
Prepared for: S.C. Department of Transportation
955 Park Street
Columbia, SC 29201



2825 BLANDING STREET
COLUMBIA, SC 29201

ORIGINAL:
October 10, 2019

REVISIONS:

1
2
3

SCALE:
AS SHOWN

DRWN. BY: MSM

CHKD. BY: TOR

APPR. BY: GME

NOTES:

Appendix B

Culvert Plan



(A)

US-15
E

(D)

(B)

(C)

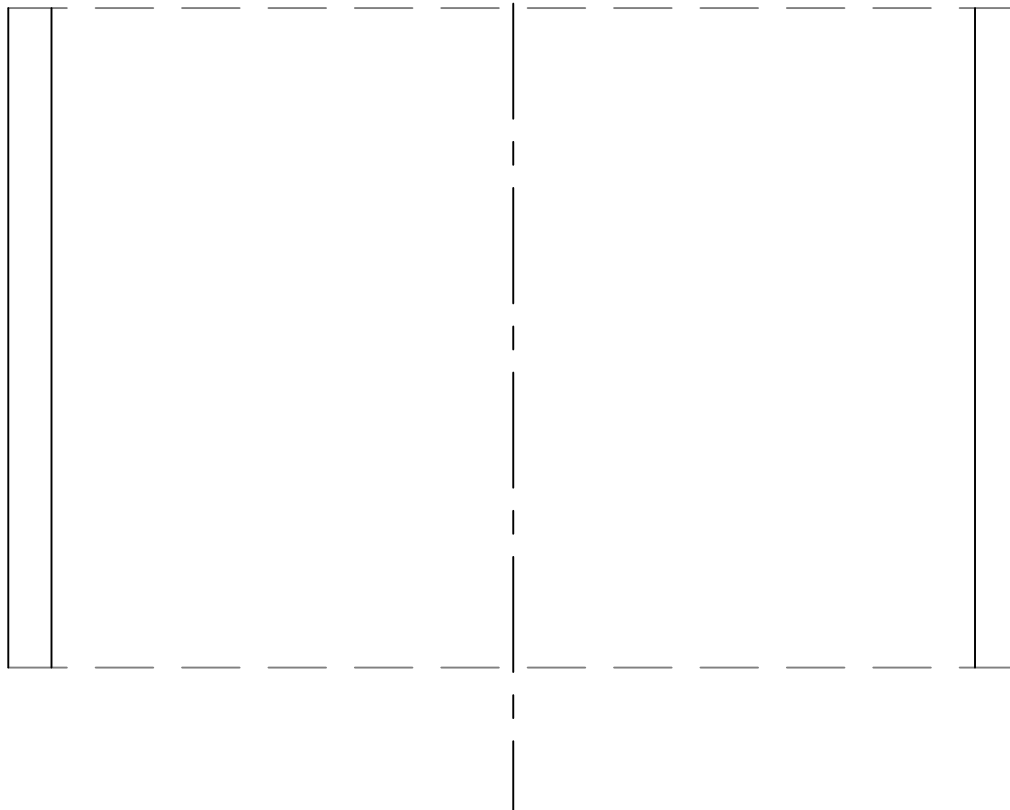


FIGURE
NUMBER:

2

F&ME CONSULTANTS
PROJECT NUMBER:

G6100.120

LEAD-BASED PAINT INVESTIGATION
US-15 RBO Indian Field Swamp
Dorchester County, SC
General Bridge Plan
Prepared for: S.C. Department of Transportation
955 Park Street
Columbia, SC 29201



2825 BLANDING STREET
COLUMBIA, SC 29201

ORIGINAL:
October 10, 2019

REVISIONS:

1 _____
2 _____
3 _____

SCALE:
N.T.S.

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

NOTES:

Appendix C

Personnel Certification

United States Environmental Protection Agency

This is to certify that



Timothy O Ross

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, 2022

LBP-I-1198705-1

Certification #

February 07, 2019

Issued On



Adrienne Priselac, Manager, Toxics Office
Land Division