Environmental Investigations and Lead Hazard Risk Assessments of Childhood Elevated Blood Lead Cases

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Toxic Substances Program

State of Tennessee

Department of Environment and Conservation

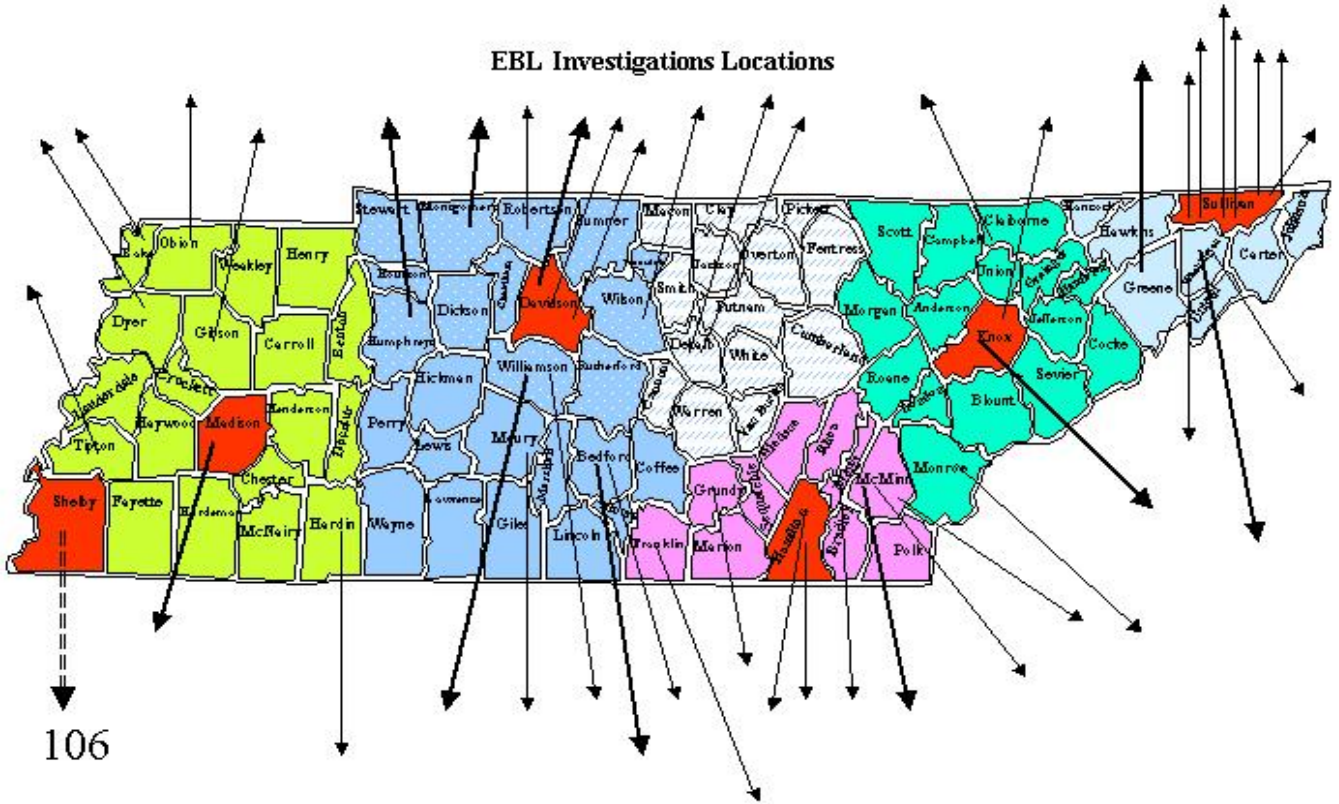
Division of Solid Waste Management

Nashville, TN

615-532-0885

Tennessee Demographics 2020	
Total Population	6,910,840
Children< 5yrs.	488,658
2018 % <5yrs tested for lead	16.6%
Confirm BLL > 5 ug/dL	969
Confirm BLL 5-9 ug/dL	837
Confirm BLL 10 - 14 ug/dL	72
Confirm BLL 15-19 ug/dL	19
Confirm BLL 20-24 ug/dL	19
Confirm BLL 25-44 ug/dL	18
Confirm BLL > 45 ug/dL	SD
Total Housing	3,031,947
Occupied housing	2,742,947
Housing <1979	1,129,674
Percent built <1979	37.3%
Owner occupied	1,765,720
Owner in built <1979	42.5%
Rental	889,017
Renter in built <1979	47.0%

TN EBL Investigations Demographics 2001 – 2016



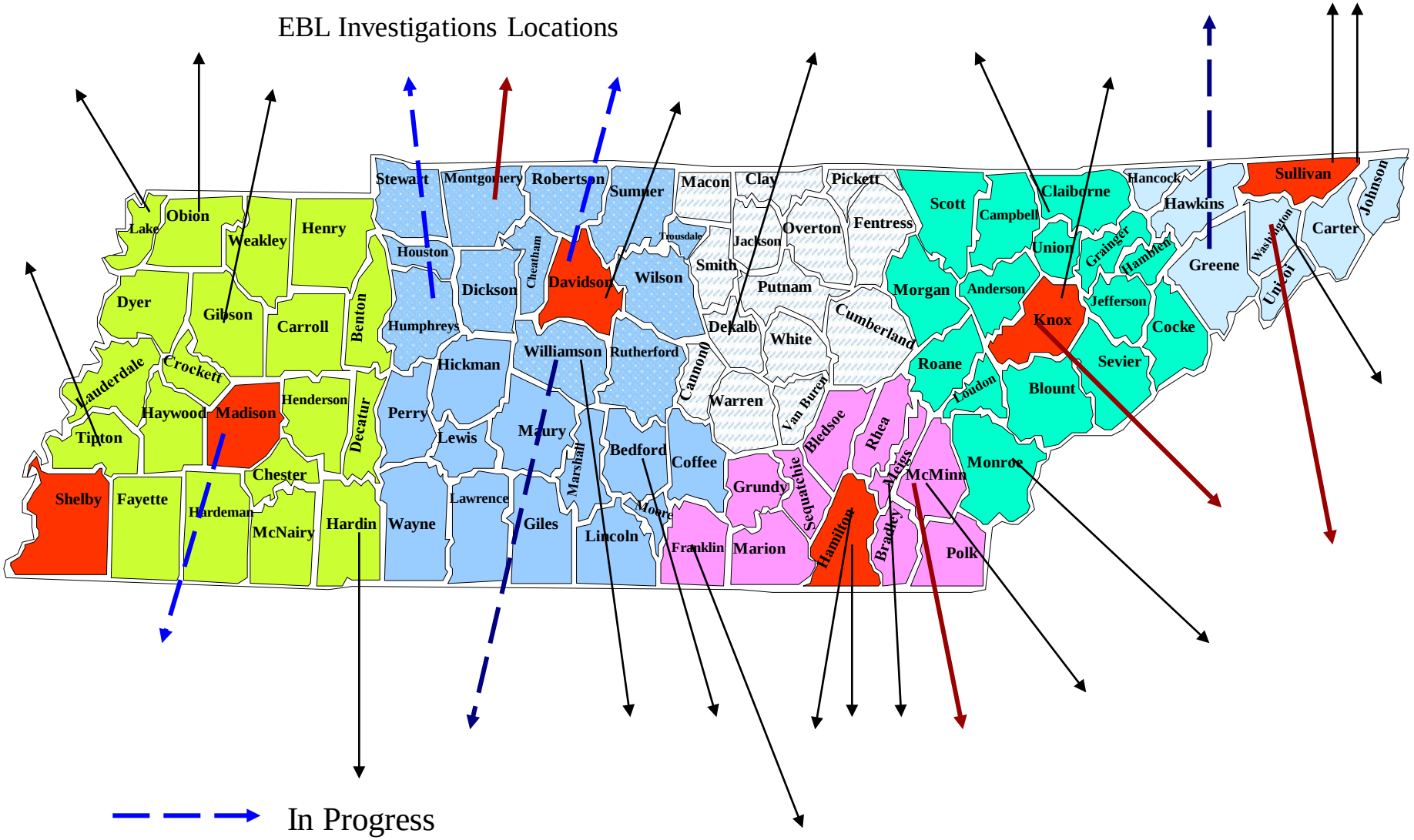
EBL Investigation Objective

1. Comprehensive attempts to identify all possible sources of lead exposure in the child's environment.
2. Includes studying all dwellings frequented by the child, such as a relative's house, school or day-care center.
3. Uncommon sources of lead also analyzed, include:

- play toys,
- medicines,
- home remedies,
- glazed pottery,
- herbs, spices, **
- candy
- occupational work sites **

TN EBL Investigations 2001 – 2016

	EBL Investigation Fiscal Year				
	17 - 18	19-20	18-19	16 - 17	21 -22
Total	30	38	18	24	11


EBL Investigations Locations
Lake
Obion
Weakley
Henry
Dyer
Gibson
Carroll
Benton
Lauderdale
Crockett
Haywood
Madison
Henderson
Decatur
Tipton
Chester
Shelby
Fayette
Hardeman
McNairy
Hardin
Stewart
Montgomery
Robertson
Sumner
Houston
Dickson
Cheatham
Davidson
Wilson
Trousdale
Humphreys
Hickman
Williamson
Rutherford
Perry
Lewis
Maury
Marshall
Bedford
Coffee
Wayne
Lawrence
Giles
Lincoln
Moore
Franklin
Marion
Macon
Clay
Pickett
Jackson
Overton
Fentress
Smith
Putnam
Dekalb
White
Cumberland
Cannon
Warren
Van Buren
Grundy
Sequatchie
Bledsoe
Rhea
Meigs
Hamilton
Bradley
Polk
Scott
Campbell
Claiborne
Hancock
Union
Grainger
Hamblen
Morgan
Anderson
Knox
Jefferson
Cocke
Roane
Loudon
Sevier
Blount
Monroe
McMinn
Greene
Hawkins
Sullivan
Washington
Unicoi
Carter
Johnson
In Progress
Completed
To Do

Who Conducts the EBL Investigation

1. State TSCA certified lead-based paint risk assessors
2. EBL investigations are regulated by the state lead-based paint program:
   - ✓ Work-practice standards used by a certified risk assessor
   - ✓ Sampling procedures
   - ✓ NLLAP required for analysis
   - ✓ Minimum report requirements
3. Collaborate findings with PCP case manager

Rashad Taylor

CLPPP EBL Principle Risk Assessor

615-339-5706

Michael Finch – LBP Certified Inspector and Risk Assessor

EBL Investigation Procedures

1. Referral from TN. Dept of Health
2. Schedule the site visit of primary residence
3. Reconnaissance of the property
4. Question parents/care givers
5. Complete the EBL Questionnaire
6. Observe the child's behavior and play habits
7. XRF testing and collection of water, soil and dust wipe samples
8. Data Collection….office
    - Property Ownership
    - Property Demographics
    - Location of potential environmental/industrial sources

Reconnaissance of the property

4 17'02

Interviewing the parents/guardian - Questionnaire

A. General Information

1. Where do you think the child is exposed to the lead hazard?

2. Do you rent or own your home? rent own (circle)

If rented, are there any rent subsidies? yes no (circle) If yes, what type: (check)

____Public Housing Authority-
____Section 8 -
____Federal rent subsidy -
____Other, (specify)- _____

Landlord information (or rent collector agent)

Name: _____

Address: _____

Phone: _____

3. When did you/your family move into this home?

Complete the following for all addresses where the child has lived during the past 12 months:

Dates of Residency	Address (include city and State)	Approximate Age of Dwelling	General Condition of Dwelling, Specify any painted surfaces, Any remodeling or renovation?

4. Is the child cared for away from the home? (This would include pre-school, day-care center, day-care home, or care provided by a relative or friend.) yes no (circle)

If YES, complete the following:

Type of Care	Location of Care (name of contact, address, and phone #)	Approximate number of hours per week at this location	General Condition of structure. Specify any painted surfaces. Any recent remodeling or renovation?

XRF Testing and Sample Collection

1. Soil and dust lead hazards are identified by comparing laboratory results of samples collected to federal regulatory standards outlined in the Code of Federal Regulations, Title 40, Part 745.65, Subpart D (40 CFR 745.65) 1/6/2020. Tennessee is in the process of adopting the new lead hazards into its state regulations.
2. The presence of a lead-water hazard are based on National Water Quality Standards. (action level of 15 ppb)
3. The investigator should note the presence and condition of all lead-based paint and why the paint is or is not a hazard.
4. Test painted surfaces with an X-Ray Fluorescence Analyzer (XRF).

XRF Testing and Screening

Collecting a Single Soil Sample:
ATSDR
Seventh Generation
Free & clear Wipes
Lingettes Pur et simple

Collecting a Single Soil Sample:
ATSDR
seventh generation baby
Free & Clear Wipes
Lingettes Pur et Simple

9'02

121
34
33
32
31
25
24
23
3 27 02

141
08 08 02

1 7'03

831

Lead Hazards

Dust-lead Hazards:

Surface dust that contains a concentration of lead equal to or exceeding 10-ug/ft^2 on floors or 100 ug/ft^2 on interior windowsills based on the analysis of wipe samples. Horizontal accessible surfaces of 10-ug/ft^2 and window troughs at 400 ug/ft^2 .

Soil-lead Hazards:

Bare soil with total lead equal to or exceeding 400 parts per million (ug/gm) in a play area or an average 1200 ug/gm bare soil in the rest of the yard based on the analysis of soil samples.

Paint-lead Hazards: 1 mg/cm2 or 0.5 % by weight

Only a hazard if it is deteriorated, on a chewable surface, on an impact surface or produces dust hazards because of abrasion.

Elevated Blood Lead Level

Environmental Investigation

Report Template

- Normalize Minimum Information Requirements
- Confidential
- Controlled Document
- Limited to Conditions Observed Day of Home Visit
- Property of State of Tennessee Health Department

Federal Report Requirements for EBL Investigations

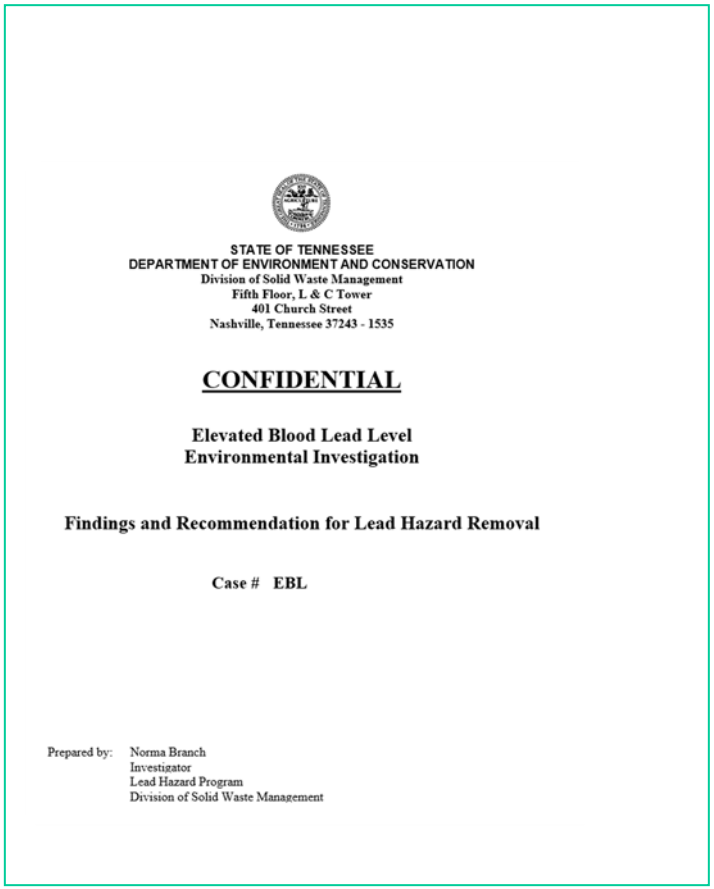
2012 HUD Guidelines for the Evaluation and Control of Lead-based Paint

Table 16.1 Summary of Recommendations for Assessment and Remediation of Residential Lead Exposure

1. Conduct an environmental investigation for all children under age 6 years with confirmed blood lead levels greater than or equal to the CDC blood lead reference value (as of 2012, 5.0 µg/dL). This investigation should include:
   a. An inspection of the child's home and other sites where the child spends significant amounts of time.
   b. A history of the child's exposure
   c. Measurements of environmental lead levels, including at a minimum:
      i. House dust.
      ii. Paint that is not intact or is subject to friction.
      iii. Exposed soil, especially in play areas.
      iv. Other media as appropriate.
2. Ensure that interventions to reduce ongoing exposure:
   a. Focus on control of current lead hazards.
   b. Include prompt initial measures (e.g., house dust control by professional cleaners) where appropriate, to reduce lead exposure rapidly.
   c. Use lead-safe practices by trained workers to avoid increasing lead exposure to occupants and workers. If the interventions include renovation, repair or painting (RRP) work that is not covered by EPA's minor repair and maintenance exemption from the EPA's RRP Rule, the work must be conducted by a certified renovation firm using a certified renovator conducting or supervising the work, and, if used, all additional workers must be trained to work in a lead-safe manner on the job.
   d. Keep to a minimum on-site removal of intact leaded paint.
   e. Replace or enclose building components when elimination of intact leaded paint is performed.
   f. Include visual inspection and clearance testing following lead hazard reduction work to ensure that lead levels are safe prior to the dwelling being re-occupied.
   g. Include temporary occupant relocation or other measures to protect occupants from exposure to leaded dust produced by lead hazard control activities.
   h. Relocate children permanently to lead-safe housing if necessary to reduce their lead exposure in a timely manner.

Sources: CDC, 2002; adapted with regard to CDC, 2012a, and to EPA's Renovation, Repair and Painting Rule (40 CFR 745, especially subpart E).

EBL Report Templates



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Division of Solid Waste Management
Fifth Floor, L & C Tower
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Nashville, Tennessee 37243 - 1535

CONFIDENTIAL

Elevated Blood Lead Level
Environmental Investigation

Findings and Recommendation for Lead Hazard Removal

Case # EBL

Prepared by: Norma Branch
Investigator
Lead Hazard Program
Division of Solid Waste Management

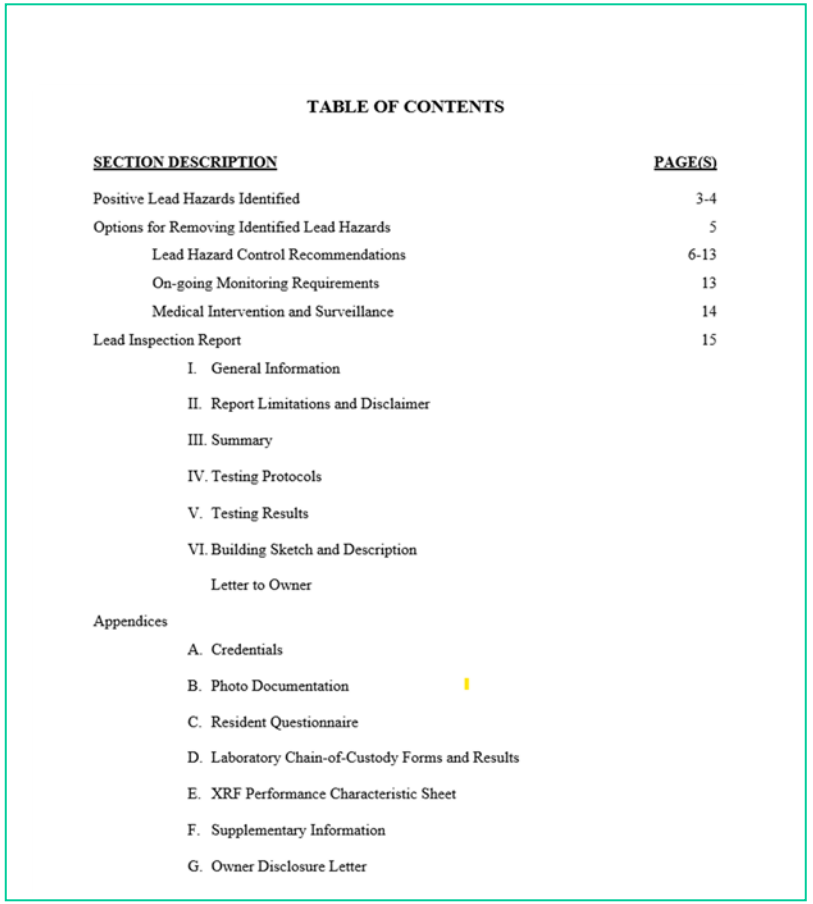

TABLE OF CONTENTS

SECTION DESCRIPTION	PAGE(S)
Positive Lead Hazards Identified	3-4
Options for Removing Identified Lead Hazards	5
Lead Hazard Control Recommendations	6-13
On-going Monitoring Requirements	13
Medical Intervention and Surveillance	14
Lead Inspection Report	15
I. General Information	
II. Report Limitations and Disclaimer	
III. Summary	
IV. Testing Protocols	
V. Testing Results	
VI. Building Sketch and Description	
Letter to Owner	
Appendices	
A. Credentials	
B. Photo Documentation	
C. Resident Questionnaire	
D. Laboratory Chain-of-Custody Forms and Results	
E. XRF Performance Characteristic Sheet	
F. Supplementary Information	
G. Owner Disclosure Letter	

Tennessee Department of Health Report

Owner/Occupant Disclosure of Lead Hazards identified as per federal requirements in TSCA 1018 Disclosure Rule.

THANK YOU

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