

**DEMOLITION
LEAD-BASED PAINT
INSPECTION REPORT**

for

**Holiday Island Recreational Center
#13 Buckskin Lane
Holiday Island, Arkansas 72631
Project # 22-0117-024**

Report Prepared for:

Mr. Danny Presley
Holiday Island Suburban
Improvement District
110 Woodsdale Drive
Holiday Island, Arkansas 72631

August 10, 2022

TABLE OF CONTENTS

LEAD-BASED PAINT INSPECTION REPORT

1.0	EXECUTIVE SUMMARY, FINDINGS & POTENTIAL COSTS.....	2
2.0	NARRATIVE ON DATA EVALUATION	4
3.0	GUIDANCE	5
3.1	HOUSING AND URBAN DEVELOPMENT	5
3.2	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY	5
3.3	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION.....	5
4.0	INSPECTION METHODOLOGY	6
4.1	DEFINITION OF ROOM EQUIVALENT	6
4.2	DEFINITION OF COMPONENTS	6
4.3	DEFINITION OF SUBSTRATE.....	6
4.4	DELINEATION OF A TESTING COMBINATION	6
4.5	SAMPLING STRATEGIES.....	6
4.6	QUALITY CONTROL PROCEDURES FOR XRF	7
5.0	ABATEMENT GUIDANCE	8

APPENDICES

- APPENDIX A – XRF Data Sheets
 - APPENDIX B – Calibration and Tolerance Check Sheets
 - APPENDIX C – Niton XLp 300 Performance Characteristics Sheet
 - APPENDIX D – Certifications
 - APPENDIX E – Photographs
 - APPENDIX F – Floor Plan
 - APPENDIX G – Lead-Based Paint Terminology
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1.0 EXECUTIVE SUMMARY, FINDINGS & POTENTIAL COSTS

Holiday Island Suburban Improvement District retained the services of Environmental Enterprise Group (EEG), Inc., to conduct lead-based paint inspection and prepare a survey report of the Holiday Island Recreational Center located at #13 Buckskin Lane in Holiday Island, Arkansas. The inspection was conducted on August 4, 2022, by Mr. Chris Spellins, Lead Inspector, Arkansas Department of Health (ADH) certification #000376.

The inspection may be used as initial guidance as to applicable Occupational Safety and Health Administration (OSHA) guidance for renovation, restoration or demolition activities. An example would be that if all readings taken from a specific area are zero or non-detect by XRF inspection, that specific area may be considered unlikely to have a lead exposure issue relating to construction, demolition or other work activities. The current OSHA Construction Standard requires that an exposure assessment be performed to determine the concentration of lead in air during work activities impacting lead-containing substrates. Additionally, the current United States Environmental Protection Agency (USEPA) regulations under the Restoration, Renovation and Painting Rule requires occupant notification, contractor certification and lead safe work practices be followed in areas where lead concentrations are above 1.0 milligram per square centimeter or 0.5 percent by weight for certain properties.

The inspection approach identified painted surfaces on the exterior and interior of the structure as components that can generally be defined as architectural features of the building. Components consist of siding, soffit, soffit trim, etc. These are the visible parts of the building. Components that are painted, stained, shellacked, varnished, or coated are tested. The inspection was conducted using a Niton X-Ray Fluorescence Spectrometer (XRF) model XLp 300, serial number 105780.

The Holiday Island Recreational Center consists of one floor and was built in the 1970's. The building is constructed of wood and rock with wood framing on a concrete slab and wood pier foundation. XRF readings are listed in data sheets included in **Appendix A**. Floor Plans are included in **Appendix F**.

No lead based painted substrates were identified. Lead safe work practices are not required for planned renovation work activities. Waste streams generated from work activities are not subject to TCLP characterization for lead.

Positive Lead-based Paint identified by XRF readings are documented by multiple readings of greater than 1.0 milligram per square centimeter. Negative Lead-based Paint readings are documented by multiple readings of less than 1.0 milligram per square centimeter.

TABLE 1 – MEASURABLE CONCENTRATIONS OF LEAD BASED PAINT BELOW THE USEPA THRESHOLD LIMIT

Materials that are not considered lead based paint by USEPA definition but that may contain lead in smaller quantities, could pose potential risks during certain job tasks such as scraping, grinding or sanding. OSHA defines lead containing materials as having ANY measurable concentration of lead. Based on a review of data from the XRF measurements care should be taken, such as utilizing lead safe work practices, while working with the following materials:

No interior surfaces were consistently above detection levels to pose potential risks while performing job tasks such as scraping, grinding or sanding.

Exterior:

Average XRF Reading in mg/cm²	Material Description
0.6	West Side, Tan Wood Soffit
0.85	North Side, Tan Wood Door Frame
0.6	North Side, Tan Wood Window Frame
0.55	North Side, Tan Wood Pillars

A complete listing of sample results is included in **Appendix A**. Photographs are included in **Appendix E**.

2.0 NARRATIVE ON DATA EVALUATION

Data collection for this inspection was performed to represent conditions in areas similar to current visible conditions. Where possible, samples or measurements were collected from locations representative of areas identified. Generally speaking, results obtained from sample collection sites are influenced by the exact location, prevalent conditions, and manner in which they are collected. Regulatory standards are referenced when applicable to the measurements or sample results.

This Lead-based Paint Investigation has been developed to provide the client with information regarding potential lead hazards relating to the building or building component. It is necessarily limited to the conditions observed, the information available at the time of the work, and the scope of the investigation. Due to the limited nature of the work, there is a possibility that there may exist conditions which could not be identified within the scope of the lead-based paint inspection or that were not apparent at the time of report preparation. It is also possible that the testing methods employed at the time of the report may later be superseded by other methods. EEG does not accept responsibility for changes in the state-of-the-art methodology. EEG believes that the findings and conclusions provided in this report are reasonable. However, no other warranties are implied or expressed.

Positive Lead-based Paint identified by XRF readings are documented by multiple readings of greater than 1.0 milligram per square centimeter (1.0 mg/cm^2). Negative Lead-based Paint readings are documented by multiple readings of less than 1.0 milligram per square centimeter (1.0 mg/cm^2). Surfaces that are consistently below detection levels are considered to have a minimal hazard for work activities relating to lead exposure. Surfaces that are consistently above detection levels but are not at Lead-based Paint levels, may pose potential risks while performing job tasks such as scraping, grinding or sanding.

3.0 GUIDANCE

3.1 Housing and Urban Development

The U.S. Department of Housing and Urban Development (HUD) is a federal agency, which establishes standard methods for lead-based paint inspections. The HUD Final Guidelines were developed for the evaluation and control of lead-based paint hazards in housing. The State of Arkansas has adopted lead-based paint hazard regulations to address professional certification standards, lead paint activity standards, enforcement and inspections. The “Residential Lead-based Paint Hazard Reduction Act of 1992” (known as Title X) has various portions which affect areas of building maintenance and worker safety. An immediate requirement of Title X is to subject federal facilities to compliance with state and local requirements governing lead hazard reduction. EEG utilized X-Ray Fluorescence (XRF) methodology as outlined in 24 CFR Part 35 (HUD). All residential property seeking federal funding for remodeling or rehabilitation must have a HUD style lead inspection prior to work activities.

3.2 United States Environmental Protection Agency

Recent federal regulations have become law concerning lead-based paint. In April 2008, the United States Protection Agency (USEPA) adopted 40 CFR Part 745 the Lead; Renovation, Repair and Painting (RRP) Program; Lead Hazard Information Pamphlet; Notice of Availability; Final Rule. Unless painted surfaces in specified target housing and work places are found to be free of lead-based paint, work activities impacting these painted surfaces will be governed by this regulation. The RRP Rule includes provisions for occupant notification of potential hazards prior to work activities, contractor certification requirements and post work evaluations with additional occupant notifications. RRP regulations cover smaller jobs that would be considered routine maintenance, it is not intended as a replacement protocol for lead abatement activities.

3.3 Occupational Safety and Health Administration

In order to ensure a safe and healthy work environment, Federal, state and local regulations require lead-based paint be identified and controlled. One function of this inspection was to establish the location of lead-based paint throughout the building and provide the basis for an Operations and Maintenance (O&M) Plan with respect to Lead-based Paint. Current Occupational Safety and Health Administration (OSHA) guidance under the General Duty Clause and Lead in Construction Standard 29 CFR 1926 and OSHA requires that an exposure assessment be performed to determine the concentration of lead in air during work activities impacting lead-containing substrates. This assessment should be in the form of industrial hygiene air monitoring on personnel impacting the lead-containing materials. The personnel impacting these materials must be trained in accordance with the OSHA regulations and must wear respirators with appropriate filters during the assessment. The result of the air monitoring data from the eight-hour shift must then be compared to the OSHA Lead Action Level (AL) and Permissible Exposure Limit (PEL). If the result of the lead in air sampling is below the OSHA AL, the use of respirators may be discontinued as long as the method of impacting the lead-containing materials remains the same. The air monitoring data must be kept on site for the duration of the work that impacts these materials.

4.0 INSPECTION METHODOLOGY

4.1 Definition of Room Equivalent

A **room equivalent** is an identifiable part of a building, such as a room, the exterior sides, or an exterior area. Hallways, stairways, and exterior areas are all examples of room equivalents.

4.2 Definition of Components

Each **room equivalent** is made up of components. Components may be located inside or outside a building. For example, components in a room are the ceiling, floor, walls, a door and its casing, the window sash, and window casings.

4.3 Definition of Substrate

The **substrate** is the material underneath the paint. Many substrates exist; however, the HUD Final Guidelines recommend classifying substrates into one of six substrate types: brick, concrete, drywall, metal, plaster, and wood. These substrate types are intended to include a broad range of materials. If the true substrate is not one of the six types, the substrate that most closely matches the true substrate is selected. For substrates on top of substrates, such as plaster on concrete, the substrate directly beneath the painted surface is used.

4.4 Delineation of a Testing Combination

A **testing combination** is characterized by the room equivalent, component, substrate, and visible color of paint. The “test location” is a specific area on a testing combination where the XRF (x-ray fluorescence) instrument tests for lead-based paint.

4.5 Sampling Strategies

The **painted surfaces** in the rooms are identified as components that can generally be defined as architectural features of the building. Components consist of walls, ceilings, floors, doors, doorjambs, window sashes, windowsills, stair treads, etc. These are the visible parts of the building. Components that are painted, stained, shellacked, varnished, coated, or covered with wallpaper are tested. Each component may be represented many times in a single room. For example, there are generally baseboards on all walls in a room. It is not necessary to test each of these baseboards in the room as long as they appear to have the same paint history. A surface-by-surface approach is conducted using a Niton X-Ray Fluorescence Spectrometer (XRF) model XLp 300, serial number 105780.

The Sampling Strategy adheres to the EPA Performance Characteristic Sheet for the particular XRF instrument used, as well as the manufacturer’s modifications and recommendations. The XRF used for detection of lead-based paint in the building is the Niton X-Ray Fluorescence Spectrometer (XRF) model XLp 300, serial number 105780. It was manufactured by Thermo-NITON Analyzers, LLC, 900 Middlesex Turnpike, Building 8, Billerica, Massachusetts 01821. Each different testing combination for all room equivalents are tested by XRF.

According to the EPA/HUD Guidelines, a lead reading by XRF of 1.0 mg/cm² or above is considered positive for the presence of lead-based paint. Below 1.0 mg/cm² is considered negative. If there are any inconclusive readings (1.0 mg/cm²), a paint-chip sample will be collected for laboratory analysis. Laboratory analysis will only be performed by an EPA NLLAP (National Lead Laboratory Accreditation Program) or AIHA ELLAP (Environmental Lead Laboratory Accreditation Program) approved laboratory. If possible, the paint-chip sample is taken from a four-square inch area that is representative of the paint on the testing combination and that is located in an obscure area. Results are given in percent lead by weight and as mg/cm² (if possible). According to the EPA/HUD Guidelines, a result of 0.5 percent or greater is considered positive. All other results are negative. There is no inconclusive range for laboratory measurements / results.

4.6 Quality Control Procedures for XRF

Data validity is key when reviewing or completing environmental investigations. To satisfy both the client and EEG that the results obtained are accurate to the best of our abilities, quality control applications were utilized while performing work with the XRF instrumentation.

A National Institute of Standards and Testing (NIST) Traceable Standard was used at the prior to test readings and at the conclusion of work to document the accuracy of the XRF. The inspection will not be considered valid should either the initial reading or post reading on the control sample be found outside the manufactures recommended tolerance value.

5.0 ABATEMENT GUIDANCE

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APPENDIX A
XRF DATA SHEETS

CLIENT	PROPERTY	INSPECTOR
Holiday Island Suburban Improv. Dist.	Holiday Island Recreational Center	Name: Chris Spellins
110 Woodsdale Drive	#13 Buckskin Lane	Signature: <i>Chris Spellins</i>
Holiday Island, Arkansas 72631	Holiday Island, Arkansas 72631	Inspection Date: August 4, 2022

TEST NO.	AREA OR FLOOR	ROOM EQUIV. OR NAME	COMPONENT	COLOR	SUBSTRATE	XRF READING (MG/CM ²)	RESULT (POS., NEG., INC.)	QUANTITY	SUBSTRATE CORRECTION (YES/NO)	CONDITION I, F, P
		SRM 2573		Red		1.1			No	I
		SRM 2573		Red		1.2			No	I
		SRM 2573		Red		1.0			No	I
1	Interior	Entrance	Wall	White	Drywall	0.02	NEG		No	I
2	Interior	Entrance	Wall	White	Drywall	<0.01	NEG		No	I
3	Interior	Entrance	Wall	White	Drywall	0.03	NEG		No	I
4	Interior	Entrance	Wall	White	Drywall	<0.01	NEG		No	I
5	Interior	Entrance	Wall	Tan	Wood	<0.01	NEG		No	I
6	Interior	Entrance	Wall	Tan	Wood	<0.01	NEG		No	I
7	Interior	Entrance	Wall	Tan	Wood	0.01	NEG		No	I
8	Interior	Entrance	Wall	Tan	Wood	<0.01	NEG		No	I
9	Interior	Entrance	Ceiling	White	Drywall	<0.01	NEG		No	I
10	Interior	Entrance	Ceiling	White	Drywall	<0.01	NEG		No	I
11	Interior	Entrance	Door	Tan	Wood	<0.01	NEG		No	I
12	Interior	Entrance	Door	Tan	Wood	<0.01	NEG		No	I
13	Interior	Entrance	Door Frame	Tan	Wood	<0.01	NEG		No	I
14	Interior	Entrance	Door Frame	Tan	Wood	<0.01	NEG		No	I
15	Interior	Entrance	Window Frame	Tan	Wood	<0.01	NEG		No	I
16	Interior	Entrance	Window Frame	Tan	Wood	0.03	NEG		No	I
17	Interior	Entrance	Window Divider	Tan	Wood	0.01	NEG		No	I
18	Interior	Entrance	Window Divider	Tan	Wood	0.02	NEG		No	I
19	Interior	Office 1	Wall	Brown	Wood	<0.01	NEG		No	I
20	Interior	Office 1	Wall	Brown	Wood	<0.01	NEG		No	I
21	Interior	Office 1	Wall	Tan	Wood	<0.01	NEG		No	I
22	Interior	Office 1	Wall	Tan	Wood	<0.01	NEG		No	I
23	Interior	Office 1	Wall	Tan	Drywall	<0.01	NEG		No	I
24	Interior	Office 1	Wall	Tan	Drywall	<0.01	NEG		No	I
25	Interior	Office 1	Ceiling	White	Drywall	<0.01	NEG		No	I
26	Interior	Office 1	Ceiling	White	Drywall	<0.01	NEG		No	I
27	Interior	Office 1	Baseboard	Brown	Wood	0.01	NEG		No	I


RESULT: P = POSITIVE N = NEGATIVE I = INCONCLUSIVE

CONDITION: I = INTACT F = FAIR P = POOR

SUBSTRATE: W = WOOD M = METAL C = CONCRETE B = BRICK D = DRYWALL P = PLASTER

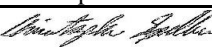
XRF: Niton XLP 300A SERIAL # 105780

AREA/FLOOR: I = INTERIOR E = EXTERIOR B = BASEMENT 1 = FIRST FLOOR

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28	Interior	Office 1	Baseboard	Brown	Wood	<0.01	NEG		No	I
29	Interior	Office 1	Cabinets	Brown	Wood	<0.01	NEG		No	I
30	Interior	Office 1	Cabinets	Brown	Wood	<0.01	NEG		No	I
31	Interior	Office 1	Door Frame	Brown	Wood	<0.01	NEG		No	I
32	Interior	Office 1	Door Frame	Brown	Wood	<0.01	NEG		No	I
33	Interior	Office 2	Wall	Tan	Drywall	<0.01	NEG		No	I
34	Interior	Office 2	Wall	Tan	Drywall	<0.01	NEG		No	I
35	Interior	Office 2	Wall	Tan	Drywall	<0.01	NEG		No	I
36	Interior	Office 2	Wall	Tan	Drywall	<0.01	NEG		No	I
37	Interior	Office 2	Ceiling	White	Drywall	<0.01	NEG		No	I
38	Interior	Office 2	Ceiling	White	Drywall	<0.01	NEG		No	I
39	Interior	Office 2	Baseboard	Brown	Wood	<0.01	NEG		No	I
40	Interior	Office 2	Baseboard	Brown	Wood	<0.01	NEG		No	I
41	Interior	Office 2	Door Frame	Brown	Wood	<0.01	NEG		No	I
42	Interior	Office 2	Door Frame	Brown	Wood	<0.01	NEG		No	I
43	Interior	Office 2	Window Frame	Brown	Wood	<0.01	NEG		No	I
44	Interior	Office 2	Window Frame	Brown	Wood	<0.01	NEG		No	I
45	Interior	Office 3	Wall	Gray	Drywall	<0.01	NEG		No	I
46	Interior	Office 3	Wall	Gray	Drywall	0.02	NEG		No	I
47	Interior	Office 3	Wall	Gray	Drywall	<0.01	NEG		No	I
48	Interior	Office 3	Wall	Gray	Drywall	<0.01	NEG		No	I
49	Interior	Office 3	Ceiling	White	Drywall	<0.01	NEG		No	I
50	Interior	Office 3	Ceiling	White	Drywall	<0.01	NEG		No	I
51	Interior	Office 3	Baseboard	Brown	Wood	<0.01	NEG		No	I
52	Interior	Office 3	Baseboard	Brown	Wood	<0.01	NEG		No	I
53	Interior	Office 3	Window Frame	Brown	Wood	<0.01	NEG		No	I
54	Interior	Office 3	Window Frame	Brown	Wood	<0.01	NEG		No	I
55	Interior	Kitchen	Wall	White	Drywall	<0.01	NEG		No	I
56	Interior	Kitchen	Wall	White	Drywall	<0.01	NEG		No	I
57	Interior	Kitchen	Wall	White	Drywall	<0.01	NEG		No	I

RESULT: P = POSITIVE N = NEGATIVE I = INCONCLUSIVE CONDITION: I = INTACT F = FAIR P = POOR
 SUBSTRATE: W = WOOD M = METAL C = CONCRETE B = BRICK D = DRYWALL P = PLASTER
 XRF: Niton XLP 300A SERIAL # 105780
 AREA/FLOOR: I = INTERIOR E = EXTERIOR B = BASEMENT 1 = FIRST FLOOR

CLIENT	PROPERTY	INSPECTOR
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58	Interior	Kitchen	Wall	White	Drywall	<0.01	NEG		No	I
59	Interior	Kitchen	Ceiling	White	Drywall	<0.01	NEG		No	I
60	Interior	Kitchen	Ceiling	White	Drywall	<0.01	NEG		No	I
61	Interior	Kitchen	Baseboard	Brown	Wood	<0.01	NEG		No	I
62	Interior	Kitchen	Baseboard	Brown	Wood	<0.01	NEG		No	I
63	Interior	Kitchen	Cabinets	Brown	Wood	<0.01	NEG		No	I
64	Interior	Kitchen	Cabinets	Brown	Wood	<0.01	NEG		No	I
65	Interior	Kitchen	Door	Brown	Wood	<0.01	NEG		No	I
66	Interior	Kitchen	Door	Brown	Wood	<0.01	NEG		No	I
67	Interior	Kitchen	Door Frame	Brown	Wood	<0.01	NEG		No	I
68	Interior	Kitchen	Door Frame	Brown	Wood	<0.01	NEG		No	I
69	Interior	Lounge	Wall	White	Drywall	<0.01	NEG		No	I
70	Interior	Lounge	Wall	White	Drywall	<0.01	NEG		No	I
71	Interior	Lounge	Wall	White	Drywall	<0.01	NEG		No	I
72	Interior	Lounge	Wall	White	Drywall	<0.01	NEG		No	I
73	Interior	Lounge	Ceiling	White	Drywall	<0.01	NEG		No	I
74	Interior	Lounge	Ceiling	White	Drywall	<0.01	NEG		No	I
75	Interior	Lounge	Ceiling	Brown	Wood	0.02	NEG		No	I
76	Interior	Lounge	Ceiling	Brown	Wood	0.05	NEG		No	I
77	Interior	Lounge	Baseboard	Tan	Wood	<0.01	NEG		No	I
78	Interior	Lounge	Baseboard	Tan	Wood	<0.01	NEG		No	I
79	Interior	Lounge	Cabinets	Tan	Wood	<0.01	NEG		No	I
80	Interior	Lounge	Cabinets	Tan	Wood	<0.01	NEG		No	I
81	Interior	Lounge	Door Frame	Tan	Wood	0.03	NEG		No	I
82	Interior	Lounge	Door Frame	Tan	Wood	0.01	NEG		No	I
83	Interior	Restroom 1	Wall	White	Drywall	<0.01	NEG		No	I
84	Interior	Restroom 1	Wall	White	Drywall	0.01	NEG		No	I
85	Interior	Restroom 1	Wall	White	Drywall	<0.01	NEG		No	I
86	Interior	Restroom 1	Wall	White	Drywall	<0.01	NEG		No	I
87	Interior	Restroom 1	Ceiling	White	Drywall	<0.01	NEG		No	I

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88	Interior	Restroom 1	Ceiling	White	Drywall	<0.01	NEG		No	I
89	Interior	Restroom 1	Door	Tan	Wood	<0.01	NEG		No	I
90	Interior	Restroom 1	Door	Tan	Wood	<0.01	NEG		No	I
91	Interior	Restroom 1	Door Frame	Brown	Wood	<0.01	NEG		No	I
92	Interior	Restroom 1	Door Frame	Brown	Wood	<0.01	NEG		No	I
93	Interior	Restroom 2	Wall	Blue	Drywall	<0.01	NEG		No	I
94	Interior	Restroom 2	Wall	Blue	Drywall	<0.01	NEG		No	I
95	Interior	Restroom 2	Wall	Blue	Drywall	<0.01	NEG		No	I
96	Interior	Restroom 2	Wall	Blue	Drywall	<0.01	NEG		No	I
97	Interior	Restroom 2	Ceiling	White	Drywall	<0.01	NEG		No	I
98	Interior	Restroom 2	Ceiling	White	Drywall	<0.01	NEG		No	I
99	Interior	Restroom 2	Cabinets	White	Wood	<0.01	NEG		No	I
100	Interior	Restroom 2	Cabinets	White	Wood	<0.01	NEG		No	I
101	Interior	Restroom 2	Door	Tan	Wood	<0.01	NEG		No	I
102	Interior	Restroom 2	Door	Tan	Wood	<0.01	NEG		No	I
103	Interior	Restroom 2	Door Frame	Brown	Wood	<0.01	NEG		No	I
104	Interior	Restroom 2	Door Frame	Brown	Wood	<0.01	NEG		No	I
105	Interior	Restroom 2	Closet Shelves	White	Wood	<0.01	NEG		No	I
106	Interior	Restroom 2	Closet Shelves	White	Wood	<0.01	NEG		No	I
107	Interior	Restroom 2	Closet Door	White	Wood	0.03	NEG		No	I
108	Interior	Restroom 2	Closet Door	White	Wood	<0.01	NEG		No	I
109	Interior	Restroom 2	Closet Door Frame	Brown	Wood	<0.01	NEG		No	I
110	Interior	Restroom 2	Closet Door Frame	Brown	Wood	<0.01	NEG		No	I
111	Interior	Womens Locker Room	Wall	Tan	Drywall	<0.01	NEG		No	I
112	Interior	Womens Locker Room	Wall	Tan	Drywall	0.01	NEG		No	I
113	Interior	Womens Locker Room	Wall	Tan	Drywall	<0.01	NEG		No	I
114	Interior	Womens Locker Room	Wall	Tan	Drywall	<0.01	NEG		No	I
115	Interior	Womens Locker Room	Ceiling	White	Drywall	<0.01	NEG		No	I
116	Interior	Womens Locker Room	Ceiling	White	Drywall	<0.01	NEG		No	I
117	Interior	Womens Locker Room	Door	Tan	Metal	<0.01	NEG		No	I

RESULT: P = POSITIVE N = NEGATIVE I = INCONCLUSIVE

CONDITION: I = INTACT F = FAIR P = POOR

SUBSTRATE: W = WOOD M = METAL C = CONCRETE B = BRICK D = DRYWALL P = PLASTER

XRF: Niton XLP 300A SERIAL # 105780

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CLIENT	PROPERTY	INSPECTOR
Holiday Island Suburban Improv. Dist.	Holiday Island Recreational Center	Name: Chris Spellins
110 Woodsdale Drive	#13 Buckskin Lane	Signature: <i>Chris Spellins</i>
Holiday Island, Arkansas 72631	Holiday Island, Arkansas 72631	Inspection Date: August 4, 2022

TEST NO.	AREA OR FLOOR	ROOM EQUIV. OR NAME	COMPONENT	COLOR	SUBSTRATE	XRF READING (MG/CM ²)	RESULT (POS., NEG., INC.)	QUANTITY	SUBSTRATE CORRECTION (YES/NO)	CONDITION I, F, P
118	Interior	Womens Locker Room	Door	Tan	Metal	<0.01	NEG		No	I
119	Interior	Womens Locker Room	Door Frame	Brown	Metal	<0.01	NEG		No	I
120	Interior	Womens Locker Room	Door Frame	Brown	Metal	<0.01	NEG		No	I
121	Interior	Mens Locker Room	Wall	Tan	Drywall	<0.01	NEG		No	I
122	Interior	Mens Locker Room	Wall	Tan	Drywall	<0.01	NEG		No	I
123	Interior	Mens Locker Room	Wall	Tan	Drywall	<0.01	NEG		No	I
124	Interior	Mens Locker Room	Wall	Tan	Drywall	<0.01	NEG		No	I
125	Interior	Mens Locker Room	Ceiling	White	Drywall	<0.01	NEG		No	I
126	Interior	Mens Locker Room	Ceiling	White	Drywall	<0.01	NEG		No	I
127	Interior	Mens Locker Room	Door	Tan	Metal	<0.01	NEG		No	I
128	Interior	Mens Locker Room	Door Frame	Brown	Metal	<0.01	NEG		No	I
129	Interior	Mens Locker Room	Door Frame	Brown	Metal	<0.01	NEG		No	I
130	Interior	Connector Room	Wall	White	Drywall	<0.01	NEG		No	I
131	Interior	Connector Room	Wall	White	Drywall	<0.01	NEG		No	I
132	Interior	Connector Room	Wall	White	Drywall	<0.01	NEG		No	I
133	Interior	Connector Room	Wall	White	Drywall	<0.01	NEG		No	I
134	Interior	Connector Room	Ceiling	White	Drywall	0.01	NEG		No	I
135	Interior	Connector Room	Ceiling	White	Drywall	<0.01	NEG		No	I
136	Interior	Connector Room	Door	Tan	Wood	<0.01	NEG		No	I
137	Interior	Connector Room	Door	Tan	Wood	<0.01	NEG		No	I
138	Interior	Connector Room	Door Frame	Tan	Metal	<0.01	NEG		No	I
139	Interior	Connector Room	Door Frame	Brown	Metal	<0.01	NEG		No	I
140	Interior	Connector Room	Shelves	White	Wood	0.02	NEG		No	I
141	Interior	Connector Room	Shelves	White	Wood	<0.01	NEG		No	I
142	Interior	Shop Room	Wall	White	Wood	0.02	NEG		No	I
143	Interior	Shop Room	Wall	White	Wood	0.08	NEG		No	I
144	Interior	Shop Room	Wall	White	Wood	0.11	NEG		No	I
145	Interior	Shop Room	Wall	White	Wood	0.12	NEG		No	I
146	Interior	Shop Room	Wall	Blue	Wood	0.05	NEG		No	I
147	Interior	Shop Room	Wall	Blue	Wood	0.04	NEG		No	I

RESULT: P = POSITIVE N = NEGATIVE I = INCONCLUSIVE

CONDITION: I = INTACT F = FAIR P = POOR

SUBSTRATE: W = WOOD M = METAL C = CONCRETE B = BRICK D = DRYWALL P = PLASTER

XRF: Niton XLP 300A SERIAL # 105780

AREA/FLOOR: I = INTERIOR E = EXTERIOR B = BASEMENT 1 = FIRST FLOOR

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TEST NO.	AREA OR FLOOR	ROOM EQUIV. OR NAME	COMPONENT	COLOR	SUBSTRATE	XRF READING (MG/CM ²)	RESULT (POS., NEG., INC.)	QUANTITY	SUBSTRATE CORRECTION (YES/NO)	CONDITION I, F, P
148	Interior	Shop Room	Wall	Blue	Wood	0.1	NEG		No	I
149	Interior	Shop Room	Wall	Blue	Wood	0.08	NEG		No	I
150	Interior	Shop Room	Ceiling	Blue	Drywall	<0.01	NEG		No	I
151	Interior	Shop Room	Ceiling	Blue	Drywall	<0.01	NEG		No	I
152	Interior	Shop Room	Floor	Gray	Concrete	<0.01	NEG		No	I
153	Interior	Shop Room	Floor	Gray	Concrete	<0.01	NEG		No	I
154	Interior	Shop Room	Door	Brown	Metal	0.23	NEG		No	I
155	Interior	Shop Room	Door	Brown	Metal	0.23	NEG		No	I
156	Interior	Shop Room	Door Frame	Tan	Wood	<0.01	NEG		No	I
157	Interior	Shop Room	Door Frame	Tan	Wood	<0.01	NEG		No	I
158	Interior	Shop Room	Window Frame	Tan	Wood	0.3	NEG		No	I
159	Interior	Shop Room	Window Frame	Tan	Wood	0.22	NEG		No	I
160	Interior	Equipment Room 1	Wall	White	Drywall	<0.01	NEG		No	I
161	Interior	Equipment Room 1	Wall	White	Drywall	<0.01	NEG		No	I
162	Interior	Equipment Room 1	Wall	White	Drywall	<0.01	NEG		No	I
163	Interior	Equipment Room 1	Wall	White	Drywall	<0.01	NEG		No	I
164	Interior	Equipment Room 1	Ceiling	White	Drywall	<0.01	NEG		No	I
165	Interior	Equipment Room 1	Ceiling	White	Drywall	<0.01	NEG		No	I
166	Interior	Equipment Room 1	Baseboard	Brown	Wood	<0.01	NEG		No	I
167	Interior	Equipment Room 1	Baseboard	Brown	Wood	<0.01	NEG		No	I
168	Interior	Equipment Room 1	Shelves	White	Wood	<0.01	NEG		No	I
169	Interior	Equipment Room 1	Shelves	White	Wood	<0.01	NEG		No	I
170	Interior	Equipment Room 1	Door	Tan	Wood	0.17	NEG		No	I
171	Interior	Equipment Room 1	Door	Tan	Wood	0.4	NEG		No	I
172	Interior	Equipment Room 1	Door Frame	Brown	Wood	<0.01	NEG		No	I
173	Interior	Equipment Room 1	Door Frame	Brown	Wood	<0.01	NEG		No	I
174	Interior	Equipment Room 1	Window Frame	White	Wood	<0.01	NEG		No	I
175	Interior	Equipment Room 1	Window Frame	White	Wood	0.01	NEG		No	I
176	Interior	Pump Room	Wall	White	Drywall	<0.01	NEG		No	I
177	Interior	Pump Room	Wall	White	Drywall	<0.01	NEG		No	I


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Holiday Island, Arkansas 72631	Holiday Island, Arkansas 72631	Inspection Date: August 4, 2022

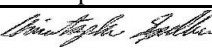
TEST NO.	AREA OR FLOOR	ROOM EQUIV. OR NAME	COMPONENT	COLOR	SUBSTRATE	XRF READING (MG/CM ²)	RESULT (POS., NEG., INC.)	QUANTITY	SUBSTRATE CORRECTION (YES/NO)	CONDITION I, F, P
178	Interior	Pump Room	Wall	White	Drywall	<0.01	NEG		No	I
179	Interior	Pump Room	Wall	White	Drywall	0.01	NEG		No	I
180	Interior	Pump Room	Ceiling	White	Drywall	<0.01	NEG		No	I
181	Interior	Pump Room	Ceiling	White	Drywall	<0.01	NEG		No	I
182	Interior	Pump Room	Shelves	White	Wood	<0.01	NEG		No	I
183	Interior	Pump Room	Shelves	White	Wood	<0.01	NEG		No	I
184	Interior	Pump Room	Door	White	Wood	<0.01	NEG		No	I
185	Interior	Pump Room	Door	White	Wood	<0.01	NEG		No	I
186	Interior	Pump Room	Door Frame	White	Wood	<0.01	NEG		No	I
187	Interior	Pump Room	Door Frame	White	Wood	<0.01	NEG		No	I
188	Interior	Equipment Room 2	Wall	Tan	Wood	0.4	NEG		No	I
189	Interior	Equipment Room 2	Wall	Tan	Wood	0.25	NEG		No	I
190	Interior	Equipment Room 2	Wall	Brown	Wood	<0.01	NEG		No	I
191	Interior	Equipment Room 2	Wall	Brown	Wood	<0.01	NEG		No	I
192	Interior	Equipment Room 2	Door	Tan	Wood	<0.01	NEG		No	I
193	Interior	Equipment Room 2	Door	Tan	Wood	<0.01	NEG		No	I
194	Interior	Equipment Room 2	Door Frame	Brown	Wood	<0.01	NEG		No	I
195	Interior	Equipment Room 2	Door Frame	Brown	Wood	<0.01	NEG		No	I
196	Interior	Tool Room	Wall	Tan	Wood	<0.01	NEG		No	I
197	Interior	Tool Room	Wall	Tan	Wood	0.04	NEG		No	I
198	Interior	Tool Room	Wall	Tan	Wood	0.04	NEG		No	I
199	Interior	Tool Room	Wall	Tan	Wood	0.01	NEG		No	I
200	Interior	Tool Room	Ceiling	Tan	Wood	0.01	NEG		No	I
201	Interior	Tool Room	Ceiling	Tan	Wood	<0.01	NEG		No	I
202	Interior	Tool Room	Shelves	White	Wood	0.01	NEG		No	I
203	Interior	Tool Room	Shelves	White	Wood	0.01	NEG		No	I
204	Interior	Tool Room	Door	Tan	Wood	<0.01	NEG		No	I
205	Interior	Tool Room	Door	Tan	Wood	<0.01	NEG		No	I
206	Interior	Tool Room	Door Frame	Brown	Wood	<0.01	NEG		No	I
207	Interior	Tool Room	Door Frame	Brown	Wood	<0.01	NEG		No	I

RESULT: P = POSITIVE N = NEGATIVE I = INCONCLUSIVE CONDITION: I = INTACT F = FAIR P = POOR

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XRF: Niton XLP 300A SERIAL # 105780

AREA/FLOOR: I = INTERIOR E = EXTERIOR B = BASEMENT 1 = FIRST FLOOR

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110 Woodsdale Drive	#13 Buckskin Lane	Signature: 
Holiday Island, Arkansas 72631	Holiday Island, Arkansas 72631	Inspection Date: August 4, 2022

TEST NO.	AREA OR FLOOR	ROOM EQUIV. OR NAME	COMPONENT	COLOR	SUBSTRATE	XRF READING (MG/CM ²)	RESULT (POS., NEG., INC.)	QUANTITY	SUBSTRATE CORRECTION (YES/NO)	CONDITION I, F, P
208	Interior	Mens Restroom	Wall	Tan	Drywall	<0.01	NEG		No	I
209	Interior	Mens Restroom	Wall	Tan	Drywall	<0.01	NEG		No	I
210	Interior	Mens Restroom	Wall	Tan	Drywall	<0.01	NEG		No	I
211	Interior	Mens Restroom	Wall	Tan	Drywall	<0.01	NEG		No	I
212	Interior	Mens Restroom	Ceiling	White	Drywall	<0.01	NEG		No	I
213	Interior	Mens Restroom	Ceiling	White	Drywall	<0.01	NEG		No	I
214	Interior	Mens Restroom	Ceiling Beams	Brown	Wood	<0.01	NEG		No	I
215	Interior	Mens Restroom	Ceiling Beams	Brown	Wood	<0.01	NEG		No	I
216	Interior	Mens Restroom	Door	Tan	Wood	<0.01	NEG		No	I
217	Interior	Mens Restroom	Door	Tan	Wood	<0.01	NEG		No	I
218	Interior	Mens Restroom	Door Frame	Brown	Metal	<0.01	NEG		No	I
219	Interior	Mens Restroom	Door Frame	Brown	Metal	<0.01	NEG		No	I
220	Interior	Mens Restroom	Window Frame	Brown	Wood	<0.01	NEG		No	I
221	Interior	Mens Restroom	Window Frame	Brown	Wood	<0.01	NEG		No	I
222	Interior	Womens Restroom	Wall	Tan	Drywall	<0.01	NEG		No	I
223	Interior	Womens Restroom	Wall	Tan	Drywall	<0.01	NEG		No	I
224	Interior	Womens Restroom	Wall	Tan	Drywall	<0.01	NEG		No	I
225	Interior	Womens Restroom	Wall	Tan	Drywall	<0.01	NEG		No	I
226	Interior	Womens Restroom	Ceiling	White	Drywall	<0.01	NEG		No	I
227	Interior	Womens Restroom	Ceiling	White	Drywall	<0.01	NEG		No	I
228	Interior	Womens Restroom	Ceiling Beams	Brown	Wood	<0.01	NEG		No	I
229	Interior	Womens Restroom	Ceiling Beams	Brown	Wood	<0.01	NEG		No	I
230	Interior	Womens Restroom	Door	Tan	Wood	<0.01	NEG		No	I
231	Interior	Womens Restroom	Door	Tan	Wood	<0.01	NEG		No	I
232	Interior	Womens Restroom	Door Frame	Brown	Metal	<0.01	NEG		No	I
233	Interior	Womens Restroom	Door Frame	Brown	Metal	<0.01	NEG		No	I
234	Interior	Womens Restroom	Window Frame	Brown	Wood	<0.01	NEG		No	I
235	Interior	Womens Restroom	Window Frame	Brown	Wood	<0.01	NEG		No	I
236	Exterior	South Side	Wall	Tan	Wood	<0.01	NEG		No	I
237	Exterior	South Side	Wall	Tan	Wood	0.16	NEG		No	I


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Holiday Island, Arkansas 72631	Holiday Island, Arkansas 72631	Inspection Date: August 4, 2022

TEST NO.	AREA OR FLOOR	ROOM EQUIV. OR NAME	COMPONENT	COLOR	SUBSTRATE	XRF READING (MG/CM ²)	RESULT (POS., NEG., INC.)	QUANTITY	SUBSTRATE CORRECTION (YES/NO)	CONDITION I, F, P
238	Exterior	South Side	Soffit	Tan	Wood	0.04	NEG		No	I
239	Exterior	South Side	Soffit	Tan	Wood	0.13	NEG		No	I
240	Exterior	South Side	Door	Tan	Wood	0.01	NEG		No	I
241	Exterior	South Side	Door	Tan	Wood	<0.01	NEG		No	I
242	Exterior	South Side	Door Frame	Tan	Wood	<0.01	NEG		No	I
243	Exterior	South Side	Door Frame	Tan	Wood	<0.01	NEG		No	I
244	Exterior	South Side	Window Frame	Tan	Wood	<0.01	NEG		No	I
245	Exterior	South Side	Window Frame	Tan	Wood	<0.01	NEG		No	I
246	Exterior	West Side	Wall	Tan	Wood	<0.01	NEG		No	I
247	Exterior	West Side	Wall	Tan	Wood	0.09	NEG		No	I
248	Exterior	West Side	Soffit	Tan	Wood	0.6	NEG		No	I
249	Exterior	West Side	Soffit	Tan	Wood	0.6	NEG		No	I
250	Exterior	West Side	Door	Tan	Wood	<0.01	NEG		No	I
251	Exterior	West Side	Door	Tan	Wood	<0.01	NEG		No	I
252	Exterior	West Side	Door Frame	Tan	Wood	0.01	NEG		No	I
253	Exterior	West Side	Door Frame	Tan	Wood	<0.01	NEG		No	I
254	Exterior	West Side	Window Frame	Tan	Wood	0.5	NEG		No	I
255	Exterior	West Side	Window Frame	Tan	Wood	0.01	NEG		No	I
256	Exterior	North Side	Wall	Tan	Wood	0.07	NEG		No	I
257	Exterior	North Side	Wall	Tan	Wood	0.24	NEG		No	I
258	Exterior	North Side	Soffit	Tan	Wood	0.05	NEG		No	I
259	Exterior	North Side	Soffit	Tan	Wood	0.08	NEG		No	I
260	Exterior	North Side	Door	Tan	Wood	0.5	NEG		No	I
261	Exterior	North Side	Door	Tan	Wood	0.02	NEG		No	I
262	Exterior	North Side	Door Frame	Tan	Wood	0.8	NEG		No	I
263	Exterior	North Side	Door Frame	Tan	Wood	0.9	NEG		No	I
264	Exterior	North Side	Window Frame	Tan	Wood	0.5	NEG		No	I
265	Exterior	North Side	Window Frame	Tan	Wood	0.7	NEG		No	I
266	Exterior	North Side	Downspout	Tan	Metal	<0.01	NEG		No	I
267	Exterior	North Side	Downspout	Tan	Metal	<0.01	NEG		No	I

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[illegible]

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APPENDIX B

CALIBRATION AND TOLERANCE CHECK SHEET

Calibration Check Test Results

Name of Property Owner:	Holiday Island Suburban Improv. Dist.	Inspector Name:	Chris Spellins
Property Identification:	Holiday Island Recreational Center	Inspector Signature:	
Residence/Building Identification:	#13 Buckskin Lane	Inspection Date:	August 4, 2022

NIST SRM 2573: 1.04 mg/cm³ Calibration Check Tolerance Used: 0.8 to 1.2 mg/cm³

First Calibration Check

NIST SRM 2573			First Average	Difference Btwn. First Average & SRM*
First Reading	Second Reading	Third Reading		
1.1	1.2	1.0	1.10	0.06

Second Calibration Check

NIST SRM 2573			Second Average	Difference Btwn. Second Average & SRM*
First Reading	Second Reading	Third Reading		
1.2	1.0	0.9	1.03	0.01

Third Calibration Check (if required)

NIST SRM 2573			Third Average	Difference Btwn. Third Average & SRM*
First Reading	Second Reading	Third Reading		

Fourth Calibration Check (if required)

NIST SRM 2573			Fourth Average	Difference Btwn. Fourth Average & SRM*
First Reading	Second Reading	Third Reading		

*If the difference of the Calibration Check Average from the NIST SRM film value is greater than the specified Calibration Check Tolerance for this device, consult the manufacturer's recommendations to bring the instrument back into control. Retest all testing combinations tested since the last successful Calibration Check test.

APPENDIX C

NITON XL_p 300 PERFORMANCE CHARACTERIZATION SHEET

Performance Characteristic Sheet

EFFECTIVE DATE: September 24, 2004

EDITION NO.: 1

MANUFACTURER AND MODEL:

Make: Niton LLC

Tested Model: XLp 300

Source: ^{109}Cd

Note: This PCS is also applicable to the equivalent model variations indicated below, for the Lead-in-Paint K+L variable reading time mode, in the XLi and XLp series:

XLi 300A, XLi 301A, XLi 302A and XLi 303A.

XLp 300A, XLp 301A, XLp 302A and XLp 303A.

XLi 700A, XLi 701A, XLi 702A and XLi 703A.

XLp 700A, XLp 701A, XLp 702A, and XLp 703A.

Note: The XLi and XLp versions refer to the shape of the handle part of the instrument. The differences in the model numbers reflect other modes available, in addition to Lead-in-Paint modes. The manufacturer states that specifications for these instruments are identical for the source, detector, and detector electronics relative to the Lead-in-Paint mode.

FIELD OPERATION GUIDANCE

OPERATING PARAMETERS:

Lead-in-Paint K+L variable reading time mode.

XRF CALIBRATION CHECK LIMITS:

0.8 to 1.2 mg/cm² (inclusive)

The calibration of the XRF instrument should be checked using the paint film nearest 1.0 mg/cm² in the NIST Standard Reference Material (SRM) used (e.g., for NIST SRM 2579, use the 1.02 mg/cm² film).

If readings are outside the acceptable calibration check range, follow the manufacturer's instructions to bring the instruments into control before XRF testing proceeds.

SUBSTRATE CORRECTION:

For XRF results using Lead-in-Paint K+L variable reading time mode, substrate correction is not needed for:

Brick, Concrete, Drywall, Metal, Plaster, and Wood

INCONCLUSIVE RANGE OR THRESHOLD:

K+L MODE READING DESCRIPTION	SUBSTRATE	THRESHOLD (mg/cm ²)
Results not corrected for substrate bias on any substrate	Brick	1.0
	Concrete	1.0
	Drywall	1.0
	Metal	1.0
	Plaster	1.0
	Wood	1.0

BACKGROUND INFORMATION

EVALUATION DATA SOURCE AND DATE:

This sheet is supplemental information to be used in conjunction with Chapter 7 of the HUD *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* ("HUD Guidelines"). Performance parameters shown on this sheet are calculated from the EPA/HUD evaluation using archived building components. Testing was conducted in August 2004 on 133 testing combinations. The instruments that were used to perform the testing had new sources; one instrument's was installed in November 2003 with 40 mCi initial strength, and the other's was installed June 2004 with 40 mCi initial strength.

OPERATING PARAMETERS:

Performance parameters shown in this sheet are applicable only when properly operating the instrument using the manufacturer's instructions and procedures described in Chapter 7 of the HUD Guidelines.

SUBSTRATE CORRECTION VALUE COMPUTATION:

Substrate correction is not needed for brick, concrete, drywall, metal, plaster or wood when using Lead-in-Paint K+L variable reading time mode, the normal operating mode for these instruments. If substrate correction is desired, refer to Chapter 7 of the HUD Guidelines for guidance on correcting XRF results for substrate bias.

EVALUATING THE QUALITY OF XRF TESTING:

Randomly select ten testing combinations for retesting from each house or from two randomly selected units in multifamily housing. Use the K+L variable time mode readings.

Conduct XRF retesting at the ten testing combinations selected for retesting.

Determine if the XRF testing in the units or house passed or failed the test by applying the steps below.

Compute the Retest Tolerance Limit by the following steps:

Determine XRF results for the original and retest XRF readings. Do not correct the original or retest results for substrate bias. In single-family housing a result is defined as the average of three readings. In multifamily housing, a result is a single reading. Therefore, there will be ten original and ten retest XRF results for each house or for the two selected units.

Calculate the average of the original XRF result and retest XRF result for each testing combination.

Square the average for each testing combination.

Add the ten squared averages together. Call this quantity C.

Multiply the number C by 0.0072. Call this quantity D.

Add the number 0.032 to D. Call this quantity E.

Take the square root of E. Call this quantity F.

Multiply F by 1.645. The result is the Retest Tolerance Limit.

Compute the average of all ten original XRF results.

Compute the average of all ten re-test XRF results.

Find the absolute difference of the two averages.

If the difference is less than the Retest Tolerance Limit, the inspection has passed the retest. If the difference of the overall averages equals or exceeds the Retest Tolerance Limit, this procedure should be repeated with ten new testing combinations. If the difference of the overall averages is equal to or greater than the Retest Tolerance Limit a second time, then the inspection should be considered deficient.

Use of this procedure is estimated to produce a spurious result approximately 1% of the time. That is, results of this procedure will call for further examination when no examination is warranted in approximately 1 out of 100 dwelling units tested.

TESTING TIMES:

For the Lead-in-Paint K+L variable reading time mode, the instrument continues to read until it is moved away from the testing surface, terminated by the user, or the instrument software indicates the reading is complete. The following table provides testing time information for this testing mode. The times have been adjusted for source decay, normalized to the initial source strengths as noted above. Source strength and type of substrate will affect actual testing times. At the time of testing, the instruments had source strengths of 26.6 and 36.6 mCi.

Testing Times Using K+L Reading Mode (Seconds)						
	All Data			Median for laboratory-measured lead levels (mg/cm ²)		
Substrate	25 th Percentile	Median	75 th Percentile	Pb < 0.25	0.25 ≤ Pb < 1.0	1.0 ≤ Pb
Wood Drywall	4	11	19	11	15	11
Metal	4	12	18	9	12	14
Brick Concrete Plaster	8	16	22	15	18	16

CLASSIFICATION RESULTS:

XRF results are classified as positive if they are greater than or equal to the threshold, and negative if they are less than the threshold.

DOCUMENTATION:

A document titled *Methodology for XRF Performance Characteristic Sheets* provides an explanation of the statistical methodology used to construct the data in the sheets, and provides empirical results from using the recommended inconclusive ranges or thresholds for specific XRF instruments. For a copy of this document call the National Lead Information Center Clearinghouse at 1-800-424-LEAD.

This XRF Performance Characteristic Sheet was developed by the Midwest Research Institute (MRI) and QuanTech, Inc., under a contract between MRI and the XRF manufacturer. HUD has determined that the information provided here is acceptable when used as guidance in conjunction with Chapter 7, Lead-Based Paint Inspection, of HUD's *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*.

APPENDIX D

PERSONNEL CERTIFICATION



State of Arkansas Department of Health



Christopher Spellins

having satisfied the requirements necessary to meet the provisions of TSCA Title IV and the Arkansas Board of Health's Rules Pertaining to Lead-Based Paint Activities and is hereby certified in the State of Arkansas in the discipline(s) of Lead

Inspector
Certificate Number: 000376

Issue Date: January 28, 2022

Expire Date: January 28, 2023

Jon Simon
Lead-Based Paint Program Coordinator

APPENDIX E
PHOTOGRAPHS



HOLIDAY ISLAND RECREATIONAL CENTER

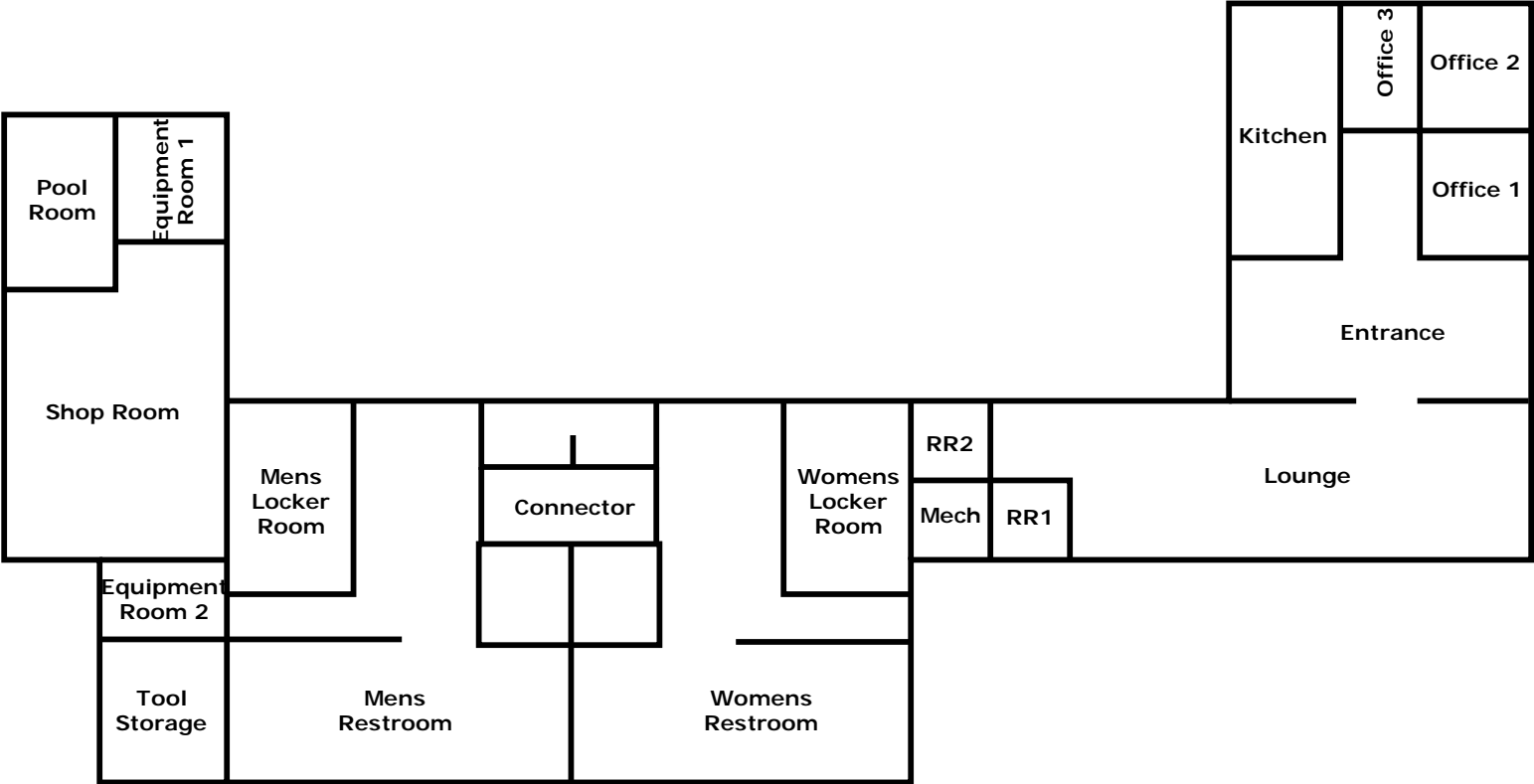
**HOLIDAY ISLAND RECREATIONAL CENTER
#13 BUCKSKIN LANE
HOLIDAY ISLAND, ARKANSAS
EEG Project #22-0117-0124**

EEG
Environmental
Enterprise Group, Inc.
www.eegonline.com

APPENDIX F

FLOOR PLAN

Floor Plan



APPENDIX G

LEAD-BASED PAINT TERMINOLOGY

LEAD GLOSSARY

AALA: American Association for Laboratory Accreditation. Also known as A2LA.

Abatement: A measure or set of measures designed to permanently eliminate lead-based paint hazards or lead-based paint. Abatement strategies include the removal of lead-based paint, enclosure, encapsulation, replacement of building components coated with lead-based paint, removal of lead-contaminated dust, and removal of lead-contaminated soil or overlaying of soil with a durable covering such as asphalt (grass and sod are considered interim control measures). All of these strategies require preparation; cleanup; waste disposal; post-abatement clearance testing; recordkeeping; and, if applicable, monitoring. See also **Complete abatement** and **Interim controls**.

Abrasion resistance: Resistance of the paint to wear by rubbing or friction; related to both toughness and gloss.

Accessible surface: Any protruding interior or exterior surface, such as an interior window sill, that a young child can mouth or chew.

Accreditation: A formal recognition that an organization, such as a laboratory, is competent to carry out specific tasks or types of tests.

Accredited laboratory: A laboratory that has been evaluated and approved by the National Lead Laboratory Accreditation Program (NLLAP), to perform lead measurement or analysis, usually over a specified period of time.

Accredited training provider: A training provider who meets the standards established by EPA for the training of risk assessors, inspectors, lead-based paint hazard control contractors, and workers.

Accuracy: The degree of agreement between an observed value and an accepted reference value (a "true" value); a data quality indicator. Accuracy includes a combination of random errors (precision) and systematic errors (bias) due to sampling and analysis.

Acrylic: A synthetic resin used in high performance waterborne coatings; a coating whose binder contains acrylic resins.

Adhesion: The ability of dry paint or other coating to attach to a surface and remain fixed on it without blistering, flaking, cracking, or being susceptible to removal by tape.

Administrative removal: The temporary removal of workers from the job to prevent the concentration of lead in their blood from reaching levels requiring medical removal.

AIHA: American Industrial Hygiene Association.

ALC: See **Apparent Lead Concentration**.

Aliquot: See **Subsample**.

Alkali: A chemical, such as lye, soda, lime, etc., that will neutralize an acid. Oil paint films can be destroyed by alkalis. Some paint removal products contain alkaline substances.

Alkyd: Synthetic resin modified with oil; coating that contains alkyd resins in the binder.

Apparent Lead Concentration (ALC): The x-ray fluorescence (XRF) reading or average of more than one reading on a *painted* surface. See also **XRF analyzer**, **Substrate Equivalent Lead (SEL)**, and **Corrected Lead Concentration (CLC)**.

Bare soil: Soil not covered with grass, sod, some other similar vegetation, or paving, including the sand in sandboxes.

Bias: A systematic error in the measurement process. For XRF readings, one source of bias is the substrate effect. See also **Substrate effect** and **XRF analyzer**.

Biennial report (for hazardous waste): A report (EPA Form 8700-13A) submitted by generators of hazardous waste to the EPA Regional Administrator. The report is due on March 1 of even-numbered years. The report includes information on the generator's activities during the previous calendar year. The owners and operators of treatment, storage, and disposal facilities must also prepare and submit biennial reports using EPA Form 8700-1313.

Binder: Solid ingredients in a coating that hold the pigment particles in suspension and bind them to the substrate. Binders used in paints and coatings include oil, alkyd, acrylic, latex, and epoxy. The nature and amount of binder determines many of the coating's performance properties—washability, toughness, adhesion, gloss, etc. See also **Pigment**.

Biological monitoring: The analysis of blood, urine, or both to determine the level of lead contamination in the body. Blood lead levels are expressed in micrograms of lead per deciliter (one-tenth of a liter) of blood, or µg/dL. They are also expressed in micromoles per liter (µmol/L).

Blank: A non-exposed sample of the medium being used for testing (i.e., wipe or filter) that is analyzed to determine if the medium has been contaminated with lead (e.g., at the factory or during transport).

Blind sample: A subsample submitted for analysis with a composition and identity known to the submitter but not to the analyst; used to test the analyst's or laboratory's proficiency in conducting measurements. See also **Spiked sample**.

Blood lead threshold: Any blood lead level greater than or equal to 10 µg/dL as defined by the Centers for Disease Control and Prevention. See also **Elevated Blood Lead Level (EBL) child**.

Building component: Any element of a building that may be painted or have dust on its surface, e.g. walls, stair treads, floors, railings, doors, window sills, etc.

Building component replacement: See **Replacement**.

Cementitious material: A material that is mixed with water, either with or without aggregate, to provide the plasticity, cohesion, and adhesion necessary for the placement and formation of a rigid mass (ASTM Standard C 11).

Centimeter: See cm.

Certification: The process of testing and evaluating against certain specifications the competence of a person, organization, or other entity in performing a function or service, usually for a specified period of time.

Certified: The designation for contractors who have completed training and other requirements to allow them to safely undertake risk assessments, inspections, or abatement work. Risk assessors, inspectors, and abatement contractors should be certified by the appropriate local, State or Federal agency.

LEAD GLOSSARY

Certified Industrial Hygienist (CIH): A person who has passed the 2-day certification exam of the American Board of Industrial Hygiene, and who has at least 4 years of experience in industrial hygiene and a graduate degree or a total of 5 years of experience. See also **Industrial hygienist**.

Certified reference material (CRM): Reference material that has at least one of its property values established by a technically valid procedure and is accompanied by or traceable to a certificate or other documentation issued by a certifying body. See also **Standard reference material**.

CFR: See **Code of Federal Regulations**.

Chalking: The photo-oxidation of paint binders—usually due to weathering—that causes a powder to form on the film surface.

Characteristics (of hazardous waste): EPA has identified four characteristics of hazardous waste: ignitability, corrosivity, reactivity, and toxicity (as determined by the TCLP test). Any solid waste that exhibits at least one of these characteristics may be classified as hazardous under the Resource Conservation and Recovery Act (RCRA), depending on how the waste is produced and what quantities are generated. See also **Toxicity Characteristic Leaching Procedure (TCLP)**.

Chewable surface: See **Chewed surface** and **Accessible surface**.

Chewed surface: Any painted surface that shows evidence of having been chewed or mouthed by a young child. A chewed surface is usually a protruding, horizontal part of a building, such as an interior window sill. See also **Accessible surface**.

CLC: See **Corrected Lead Concentration (CLC)**.

Cleaning: The process of using a HEPA vacuum and wet cleaning agents to remove leaded dust; the process includes the removal of bulk debris from the work area. OSHA prohibits the use of compressed air to clean lead-contaminated dust from a surface.

Clearance examination: Visual examination and collection of environmental samples by an inspector or risk assessor and analysis by an accredited laboratory upon completion of an abatement project, interim control intervention, or maintenance job that disturbs lead-based paint (or paint suspected of being lead-based). The clearance examination is performed to ensure that lead exposure levels do not exceed standards established by the EPA Administrator pursuant to Title IV of the Toxic Substances Control Act, and that any cleaning following such work adequately meets those standards.

Clearance examiner: A person who conducts clearance examinations following lead-based paint hazard control and cleanup work, usually a certified risk assessor or a certified inspector. **cm:** Centimeter; 1/100 of a meter.

Code of Federal Regulations (CFR): The codification of the regulations of Federal agencies. The regulations are published in the *Federal Register*. See also **Federal Register (FR)**.

Cohesion: Ability of a substance to adhere to itself; internal adhesion; the force holding a substance together.

Common area: A room or area that is accessible to all residents in a community (e.g., hallways or lobbies); in general, any area not kept locked.

Competent person: As defined in the OSHA Lead Construction Standard (29 CFR 1926.62), a person who is capable of identifying or predicting hazardous working conditions and work areas, and who has authorization to take prompt, corrective measures to eliminate the hazards. A competent person is not necessarily a risk assessor, inspector, or abatement project supervisor.

Complete abatement: Abatement of all lead-based paint inside and outside a dwelling or building and reduction of any lead-contaminated dust or soil hazards. All of these strategies require preparation; cleanup; waste disposal; post-abatement clearance testing; recordkeeping; and, if applicable, reevaluation and on-going monitoring. See also **Abatement**.

Compliance plan: A document that describes the types of tasks, workers, protective measures, and tools and other materials that may be employed in lead-based paint hazard control to comply with the OSHA Lead Exposure in Construction standard.

Composite sample: A single sample made up of individual subsamples. Analysis of a composite sample produces the arithmetic mean of all subsamples. **Containment:** A process to protect workers and the environment by controlling exposures to the lead-contaminated dust and debris created during abatement. See **Worksite preparation level**.

Contingency plan: A document that describes an organized, planned, and coordinated course of action to be taken during any event that threatens human health or the environment, such as a fire, explosion, or the release of hazardous waste or its constituents from a treatment, storage, or disposal facility.

Corrected Lead Concentration (CLC): The absolute difference between the Apparent Lead Concentration and the Substrate Equivalent Lead. See also **Apparent Lead Concentration (ALC)** and **Substrate Equivalent Lead (SEL)**.

Detection limit: The minimum amount of a substance that can be reliably measured by a particular method.

Deteriorated lead-based paint: Any lead-based paint coating on a damaged or deteriorated surface or fixture, or any interior or exterior lead-based paint that is peeling, chipping, blistering, flaking, worn, chalking, alligatoring, cracking, or otherwise becoming separated from the substrate.

Digestion blank: A mixture of the reagents used for digesting of paint, soil, or dust matrixes but without the matrix. The blank undergoes all the steps of the analysis, starting with digestion. The blank is used to evaluate the contamination process from a laboratory.

Direct-reading XRF: An analyzer that provides the operator with a display of lead concentrations calculated from the lead K x ray intensity without a graphic of the spectrum usually in mg/cm² (milligrams of lead per square centimeter of painted surface area). See also **XRF analyzer**.

Disposal (of hazardous waste): The discharge, deposit, injection, dumping, spilling, leaking, or placement of solid or hazardous waste on land or in water so that none of its constituents can pollute the environment by being emitted into the air or discharged into a body of water, including groundwater.

Disposal facility: A facility or part of one in which hazardous waste is placed on land or in water to remain there after the facility closes.

Door mat: See **Walk-off mat**.

LEAD GLOSSARY

Dust removal: A form of interim control that involves initial cleaning followed by periodic monitoring and re-cleaning, as needed. Depending on the severity of lead-based paint hazards, dust removal may be the primary activity or just one element of a broader control effort.

Dust trap: A surface, component, or furnishing that serves as a reservoir where dust can accumulate.

EBL child: See **Elevated Blood Lead level (EBL) child**.

Efflorescence: The salt rising to the surface of a material, such as masonry, plaster, or cement, caused by the movement of water through the material. Paint or encapsulants may not adhere to a surface contaminated with efflorescence.

Elastomeric: A group of pliable, elastic liquid encapsulant coatings. An elastomer is a macromolecular material which, at room temperature, is capable of substantially recovering its size and shape after the force causing its deformation is removed (see ASTM D 907, D-14).

Elevated Blood Lead level (EBL) child: A child who has a blood lead level greater than or equal to 20 µg/dL or a persistent 15 µg/dL. See also **Blood lead threshold**.

Encapsulation: Any covering or coating that acts as a barrier between lead-based paint and the environment, the durability of which relies on adhesion and the integrity of the existing bonds between multiple layers of paint and between the paint and the substrate. See also **Enclosure**.

Enclosure: The use of rigid, durable construction materials that are mechanically fastened to the substrate to act as a barrier between the lead-based paint and the environment.

Field blank: A clean sample of the matrix (e.g., filter, or wipe) that has been exposed to the sampling conditions; returned to the laboratory; and analyzed as an environmental sample. Clean quartz sand, air sampling filters and cassettes, and clean wipes can be used as field blanks. The field blank, which should be treated just like the sample, indicates possible sources of contamination.

FR: See **Federal Register (FR)**.

Friction surface: Any interior or exterior surface, such as a window or stair tread, subject to abrasion or friction.

Generator: Any person whose act or operation produces hazardous waste identified or listed in 40 CFR Part 261 or whose act causes a hazardous waste to come under regulation (40 CFR 260.10).

Generator identification number: The unique number assigned by EPA to each generator; transporter of hazardous waste; and treatment, storage, or disposal facility.

Hazardous waste: As defined in EPA regulations (40 CFR 261.3), *hazardous waste* is solid waste or a combination of solid wastes that because of its quantity; concentration; or physical, chemical, or infectious characteristics may cause or significantly contribute to increases in mortality, serious and irreversible or incapacitating but reversible illnesses, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed. As defined in the regulations, solid waste is hazardous if it meets one of four conditions: (1) exhibits a characteristic of hazardous waste

(40 CFR Sections 261.20 through 262.24); (2) has been listed as hazardous (40 CFR Section 261.31 through 261.33); (3) is a mixture containing a listed hazardous waste combined with a nonhazardous solid waste, unless the mixture is specifically excluded or no longer exhibits any of the characteristics of hazardous waste; and (4) is not excluded from regulation as hazardous waste. For lead-based paint abatement

Engineering controls: Measures other than respiratory protection or administrative controls that are implemented at the work site to contain, control, and/or otherwise reduce exposure to lead-contaminated dust and debris usually in the occupational health setting. The measures include process and product substitution, isolation, and ventilation.

Epoxy paint: Paint based on an epoxy resin. An epoxy resin is a cross-linking resin the reactivity of which depends on the epoxide group.

Evaluation: Risk assessment, paint inspection, reevaluation, investigation, clearance examination, or risk assessment screen.

Examination: See **Clearance examination**.

Examiner: A person certified to conduct clearance examinations or reevaluations, usually a certified inspector or certified risk assessor.

Exposure monitoring: The sampling and analysis of air both inside and outside the work area to determine the degree of worker and resident exposure to lead or other airborne contaminants, often involving air sampling inside a worker's breathing zone.

Exterior work area: For lead hazard control work, the exterior work area includes any exterior building components, such as a porch or stairway; the safety perimeter; and access barriers.

Facility (pertaining to hazardous waste): All buildings, contiguous land, structures, and other appurtenances, as well as any improvements, where lead-based paint or hazardous waste is treated, stored, or disposed. A facility may consist of several different treatment, storage, or disposal units, such as landfills and surface impoundments.

Federal Register (FR): A daily Federal publication that contains proposed and final regulations, rules, and notices.

Fibermat: A semirigid woven material attached with a liquid adhesive to a surface or substrate waste, hazardous waste is waste that contains more than 5 ppm of leachable lead as determined by the TCLP test, or is waste that is corrosive, ignitable, or reactive and not otherwise excluded.

Hazardous Waste Manifest: See **Manifest**.

Heat gun: A device capable of heating lead-based paint causing it to separate from the substrate. For lead hazard control work, the heat stream leaving the gun should not exceed 1,100 °F (some authorities may use a different temperature).

HEPA filter: See **High-Efficiency Particulate Air (HEPA) filter**.

HEPA/wet wash/HEPA cycle: The cleaning cycle that begins with HEPA vacuuming, followed by a wet wash with a lead-specific cleaning agent, such as trisodium phosphate detergent or another liquid cleaning agent, followed by a final pass with a HEPA vacuum over the surface.

LEAD GLOSSARY

High-Efficiency Particulate Air (HEPA) filter: A filter capable of removing particles of 0.3 microns or larger from air at 99.97 percent or greater efficiency.

High phosphate detergent: See **Trisodium phosphate (TSP) detergent**.

Impact surface: An interior or exterior surface (such as surfaces on doors) subject to damage by repeated impact or contact.

Incinerator: An enclosed device using controlled flame combustion that neither meets the criteria for classification as a boiler nor is listed as an industrial furnace.

Industrial hygienist: A person having a college or university degree in engineering, chemistry, physics, medicine, or a related physical or biological science who, by virtue of special training, is qualified to anticipate, recognize, evaluate, and control environmental and occupational health hazards and the impact of those hazards on the community and workers.

In-place management: See **Interim controls**. **Inspection (of paint):** A surface-by-surface investigation to determine the presence of lead-based paint (in some cases including dust and soil sampling) and a report of the results.

Inspector: An individual who has completed training from an accredited program and been licensed or certified by the appropriate State or local agency to (1) perform inspections to determine and report the presence of lead-based paint on a surface-by-surface basis through onsite testing, (2) report the findings of such an inspection, (3) collect environmental samples for laboratory analysis, (4) perform clearance testing, and (5) document successful compliance with lead-based paint hazard control requirements or standards.

Interim controls: A set of measures designed to temporarily reduce human exposure or possible exposure to lead-based paint hazards. Such measures include specialized cleaning, repairs, maintenance, painting, temporary containment, and management and resident education programs. Monitoring, conducted by owners, and reevaluations, conducted by professionals, are integral elements of interim control. Interim controls include dust removal; paint film stabilization; treatment of friction and impact surfaces; installation of soil coverings, such as grass or sod; and land-use controls. See also **Monitoring**, **Reevaluation**, and **Abatement**.

Interior window sill: The portion of the horizontal window ledge that protrudes into the interior of the room, adjacent to the window sash when the window is closed; often called the window stool.

Investigation (pertaining to EBL case): The process of determining the source of lead exposure for a child or other resident with an elevated blood lead level. Investigation consists of administration of a questionnaire, comprehensive environmental sampling, case management, and other measures.

Investigator: A person who conducts an investigation of a dwelling where a resident has an elevated blood lead level. The investigator must be proficient in interviewing techniques, environmental sampling, and the interpretation of risk assessment and environmental sampling data.

Laboratory analysis: A determination of the lead content by atomic absorption spectroscopy, inductively coupled plasma emission spectroscopy, or laboratory-based K or L x-ray fluorescence, or an equivalent method.

Landfill: A State-licensed or State-permitted disposal facility that meets municipal solid waste standards (see Federal regulations at 40 CFR 258).

Landfill liner: A continuous layer of natural or synthetic materials placed beneath and sometimes around a surface impoundment, landfill, or landfill cell. The layer restricts the downward or lateral escape of hazardous waste, hazardous waste constituents, or leachate (40 CFR Part 258).

Latex: A waterborne emulsion paint made with synthetic binders, such as 100-percent acrylic, vinyl acrylic, terpolymer, or styrene acrylic; a stable emulsion of polymers and pigment in water.

Lead: Lead includes metallic lead and inorganic and organic compounds of lead.

Lead-based paint: Any paint, varnish, shellac, or other coating that contains lead equal to or greater than 1.0 mg/cm² as measured by XRF or laboratory analysis, or 0.5 percent by weight (5,000 µg/g, 5,000 ppm, or 5,000 mg/kg) as measured by laboratory analysis. (Local definitions may vary.)

Lead-based paint hazard: A condition in which exposure to lead from lead-contaminated dust, lead-contaminated soil, or deteriorated lead-based paint would have an adverse effect on human health (as established by the EPA Administrator under Title IV of the Toxic Substances Control Act). Lead-based paint hazards include for example, deteriorated lead-based paint, leaded dust levels above applicable standards, and bare leaded soil above applicable standards.

Lead-based paint hazard control: Activities to control and eliminate lead-based paint hazards, including interim controls, abatement, and complete abatement.

Lead-based paint abatement planner/designer: An individual who has completed an accredited training program on planning and designing lead-based paint abatement projects.

Lead-based paint abatement worker: See **Worker**.

Lead carbonate: A pigment used in some lead-based paints as a hiding agent; also known as white lead.

Lead-contaminated dust: Surface dust in residences that contains an area or mass concentration of lead in excess of the standard established by the EPA Administrator, pursuant to Title IV of the Toxic Substances Control Act. Until the EPA standards are set, the HUD-recommended clearance and risk assessment standards for leaded dust are 100 µg/ft² on floors, 500 µg/ft² on interior window sills, and 800 µg/ft² on window troughs. The recommended standard for lead hazard screens for floors is 50 µg/ft² and for window troughs is 400 µg/ft².

Lead-contaminated soil: Bare soil on residential property that contains lead in excess of the standard established by the EPA Administrator, pursuant to Title IV of the Toxic Substances Control Act. The HUD-recommended standard and interim EPA guidance is 400 µg/g for high-contact play areas and 2,000 µg/g in other bare areas of the yard. Soil contaminated with lead at levels greater than or equal to 5,000 µg/g should be abated by removal or paving.

Lead-free dwelling: A lead-free dwelling contains no lead-based paint and has interior dust and exterior soil lead levels below the applicable HUD and EPA standards.

LEAD GLOSSARY

Lead hazard screen: A means of determining whether residences in good condition should have a full risk assessment. Also called a risk assessment screen.

Lead-poisoned child: A child with a single blood lead level that is greater than or equal to 20 µg/dL or consecutive blood lead levels greater than or equal to 15 µg/dL. Local definitions may vary.

Lead-specific detergent: A cleaning agent manufactured specifically for cleaning and removing leaded dust or other lead contamination.

Leaded dust: See **Lead-contaminated dust**.

Leaded zinc: A paint primer made from zinc oxide and lead sulfates.

Licensed: Holding a valid license or certification issued by EPA or by an EPA-approved State program pursuant to Title IV of the Toxic Substances Control Act. The license is based on certification for lead-based paint hazard control work. See also **Certified**.

Listed waste: A hazardous waste that has been placed on one of three lists developed by EPA: nonspecific source wastes, specific source wastes, and commercial chemical products. The lists were developed by examining different types of waste and chemical products to determine if they exhibited one of the four characteristics of hazardous waste (toxicity, corrosivity, ignitability, or reactivity), met the statutory definition of hazardous waste, were acutely toxic or acutely hazardous, or were otherwise toxic.

Maintenance: Work intended to maintain adequate living conditions in a dwelling, which has the potential to disturb lead-based paint or paint that is suspected of being lead-based.

Manifest: The shipping document (EPA Form 8700–22 or a comparable form required by the State or locality) used for identifying the quantity, composition, origin, routing, and destination of hazardous waste during its transport from the point of generation to the point of treatment, storage, or disposal. Also, a shipping document used to keep track of items being transported. All hazardous waste must be accompanied by a manifest. See **Hazardous waste**.

Mat: See **Walk-off mat**.

Matrix blank: A sample of the matrix (paint chips, soil, or dust) that does not contain the analyte lead. This sample goes through the complete analysis, including digestion.

MDL: See **Method detection limit (MDL)**.

Mean: The arithmetic average of a series of numerical data values; for example, the algebraic sum of the data values divided by the number of data values.

Medical removal: The temporary removal of workers from the job because of the occurrence of elevated blood lead levels as defined in the OSHA Lead Exposure in Construction standard (29 CFR 1926.62).

Method blank: See **Digestion blank**.

Method detection limit (MDL): The minimum concentration of an analyte that, for a given matrix and method, has a 99-percent probability of being identified, qualitatively or quantitatively measured, and reported to be greater than zero.

mg: Milligram; 1/1,000 of a gram.

Microgram: See µg.

Mil: 1/1,000 of an inch; used to measure thickness.

Milligram: See **mg**.

Monitoring: Surveillance to determine (1) that known or suspected lead-based paint is not deteriorating, (2) that lead-based paint hazard controls, such as paint stabilization, enclosure, or encapsulation have not failed, (3) that structural problems do not threaten the integrity of hazard controls or of known or suspected

Oxidation: A chemical reaction that occurs upon exposure to oxygen. Some coatings cure by oxidation; oxygen enters the liquid coating and crosslinks (attaches) the resin molecules. This film-forming method is also called “air cure” or “air dry.” Oxidation also causes rust to form on metals and paint to chalk.

Paint film stabilization: The process of wet scraping, priming, and repainting surfaces coated with deteriorated lead-based paint; paint film stabilization includes cleanup and clearance.

Paint removal: An abatement strategy that entails the removal of lead-based paint from surfaces. For lead hazard control work, this can mean using chemicals, heat guns below 1,100 °F, and certain *contained* abrasive methods. Open flame burning, open abrasive blasting, sandblasting, water blasting, and extensive dry scraping are prohibited paint removal methods. (Methylene chloride paint removers and dry scraping are also not recommended.)

Patch test: A test method or procedure to assess the adhesion of an encapsulant coating to a substrate covered with a layer or layers of lead-based paint.

Personal breathing zone samples: Air samples collected from the breathing zone of a worker (within a 1-foot radius of the worker’s mouth) but outside the respirator. The samples are collected with a personal sampling pump operating at 2 liters per minute, drawing air through a 37 mm mixed cellulose ester filter housed in a closed-face cassette with a pore size of 0.8 microns. See **Exposure monitoring**.

Personal Protective Equipment (PPE): Equipment for protecting the eyes, face, head, and/or extremities; includes protective clothing, respiratory devices, and protective shields; used when hazards capable of causing bodily injury or impairment are encountered. lead-based paint, and (4) that dust lead levels have not risen above applicable standards. There are two types of monitoring activities; visual surveys by property owners and reevaluations by certified risk assessors. Visual surveys are generally conducted annually for the purpose of making the first three determinations listed above. Reevaluations are conducted in accordance with the Standard Reevaluation Schedule (or more frequently, if needed) for the purpose of making all four determinations. Monitoring is not required in properties known to be free of lead-based paint. See also **Reevaluation** and **Standard reevaluation schedule**.

Monofil: A State-approved landfill that accepts only construction debris.

Mouthable surface: See **Chewed surface**.

Multifamily housing: Housing that contains more than one dwelling unit per location.

LEAD GLOSSARY

NLLAP requirements: Requirements, specified by the EPA National Lead Laboratory Accreditation Program (NLLAP), for accreditation for the lead analysis of paint, soil, and dust matrixes by an EPA-recognized laboratory accreditation organization.

Offsite paint removal: The process of removing a component from a building and stripping the paint from the component at an offsite paintstripping facility.

Ongoing monitoring: See **Monitoring**.

Owner: A person, firm, corporation, guardian, conservator, receiver, trustee, executor, government agency or entity, or other judicial officer who, alone or with others, owns, holds, or controls the freehold or leasehold title or part of the title to property, with or without actually possessing it. This definition includes a vendee who possesses the title, but does not include a mortgagee or an owner of a reversionary interest under a ground rent lease.

PHA: See **Public Housing Agency (PHA)**.

Pigment: Insoluble, finely ground materials that give paint its properties of color and hide.

Pigment Volume Concentration (PVC): Pigment volume as a percentage of the total nonvolatile ingredients.

Pilot project: In multifamily housing, the testing of a lead-based paint hazard control strategy on a limited number of dwellings, usually those that are vacant, to determine the feasibility of carrying out such a strategy in the entire multifamily housing development; usually involves paint testing, air sampling, wipe sampling, worksite preparation, and a variety of lead-based paint hazard control treatments.

Plastic: See **Polyethylene plastic**.

Polyethylene plastic: All references to polyethylene plastic refer to 6-mil plastic sheeting or polyethylene bags (or doubled bags if using 4-mil polyethylene bags), or any other thick plastic material shown to demonstrate at least equivalent performance. Plastic used to contain waste should be capable of completely containing the waste and, after being properly sealed, should remain leak-tight with no visible signs of discharge during movement or relocation.

Polyurethane: An exceptionally hard and wear-resistant coating created by the reaction of polyols with a multifunctional isocyanate; often used to seal wood floors following lead-based paint hazard control work and cleaning.

Precision: The degree to which a set of observations or measurements of the same property, usually obtained under similar conditions, conform to themselves; a data quality indicator. Precision is usually expressed in either absolute or relative terms as standard deviation, variance, or range. Often known as "reproducibility."

Primary prevention: The process of controlling lead hazards to prevent exposure *before* a child is poisoned. See **Secondary prevention** and **Tertiary prevention**.

Primary standard: A substance or device with a property or value that is unquestionably accepted, within specified limits, in establishing the value of the same or related property of another substance or device.

Public Housing Agency (PHA): Any State, county, municipality, or other government entity or public body, or agency or instrumentality thereof, authorized to engage or assist

in the development or operation of housing for low income families.

PVC: See **Pigment Volume Concentration (PVC)**.

Quality Assurance (QA): An integrated system of activities involving planning, quality control, quality assessment, reporting, and quality improvement to ensure that a product or service meets defined standards of quality within a stated level of confidence.

Quality Control (QC): The overall system of technical activities whose purpose is to measure and control the quality of a product or service so that it meets the needs of users. The aim is to provide a level of quality that is satisfactory, adequate, dependable, and economical.

Random sample: A sample drawn from a population in a way that allows each member of the population to have an equal chance of being selected. Random sampling is a process used to identify locations for the lead-based paint inspections in multifamily dwellings. See also **Targeted sample** and **Worst-case sample**.

RCRA: See **Resource Conservation and Recovery Act (RCRA)**.

Reevaluation: In lead hazard control work, the combination of a visual assessment and collection of environmental samples performed by a certified risk assessor to determine if a previously implemented lead-based paint hazard control measure is still effective and if the dwelling remains lead-safe.

Reference material: A material or substance that has at least one sufficiently well established property that can be used to calibrate an apparatus, assess a measurement method, or assign values to materials.

Reinspection: See **Reevaluation**.

Removal: See **Paint removal**.

Renovation: Work that involves construction and/or home or building improvement measures such as window replacement, weatherization, remodeling, and repainting.

Replacement: A strategy of abatement that entails the removal of building components coated with lead-based paint (such as windows, doors, and trim) and the installation of new components free of lead-based paint.

Representative sample: A sample of a universe or whole (e.g., waste sample pile, lagoon, groundwater, or waste stream) that can be expected to exhibit the average properties of the entire universe or whole.

Resident: A person who lives in a dwelling.

Resource Conservation and Recovery Act (RCRA): The primary Federal statute governing waste management from generation to disposal. RCRA defines the criteria for hazardous and nonhazardous waste.

Risk assessment: An onsite investigation of a residential dwelling to discover any lead-based paint hazards. Risk assessments include an investigation of the age, history, management, and maintenance of the dwelling, and the number of children under age 6 and women of childbearing age who are residents; a visual assessment; limited environmental sampling (i.e., collection of dust wipe samples, soil samples, and

LEAD GLOSSARY

deteriorated paint samples); and preparation of a report identifying acceptable abatement and interim control strategies based on specific conditions.

Risk assessment screen: A type of risk assessment performed only in buildings in good condition using fewer samples but more stringent evaluation criteria (standards) to determine lead hazards.

Risk assessor: A certified individual who has completed training with an accredited training program and who has been certified to (1) perform risk assessments, (2) identify acceptable abatement and interim control strategies for reducing identified lead-based paint hazards, (3) perform clearance testing and reevaluations, and (4) document the successful completion of lead-based paint hazard control activities.

Sample site: A specific spot on a surface being tested for lead concentration.

Saponification: The chemical reaction between alkalies and oil that produces a type of soap. Because of saponification, oil and alkyd coatings will not adhere to masonry substrates, galvanized metals, or zinc-rich primers. Also a form of incompatibility between types of coatings.

Screen: See **Risk assessment screen** or **Lead hazard screen**.

Screening: The process of testing children to determine if they have elevated blood lead levels.

Secondary prevention: The process of identifying children who have elevated blood lead levels through screening and controlling or eliminating the sources of further exposure. See also **Primary prevention** and **Tertiary prevention**.

SEL: See **Substrate Equivalent Lead (SEL)**.

Site: The land or body of water where a facility is located or an activity is conducted. The site includes adjacent land used in connection with the facility or activity.

Small-quantity generator: Owners, contractors (generators), or both who produce less than 100 kg of hazardous waste per month and accumulate less than 100 kg of hazardous waste at any one time, or who produce less than 1 kg of *acutely* hazardous waste per month and accumulate less than 1 kg of *acutely* hazardous waste at any one time.

Soil: See **Bare soil**.

Solid waste: As defined by RCRA, the term *solid waste* means garbage; refuse; sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility; or other discarded materials, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations or from community activities. The term does not include solid or dissolved material in domestic sewage or solid or dissolved material in irrigation return flows or industrial discharges (which are point sources subject to permits under the Clean Water Act), nor does the term include special nuclear or byproduct material as defined by the Atomic Energy Act of 1954.

Spectrum analyzer: A type of XRF analyzer that provides the operator with a plot of the energy and intensity, or counts of both K and L x-ray spectra, as well as a calculated lead concentration. See also **XRF analyzer**.

Spiked matrix: See **Spiked sample**.

Spiked sample: A sample prepared by adding a known mass of the target analyte (e.g., leaded dust) to a specific amount of matrix sample (e.g., one dust wipe) for which an independent estimate of the target analyte concentration is available. Spiked samples are used to determine, for example, the effect of the matrix on a method's recovery efficiency. See also **Blind sample**.

Spot-prime: To apply a paint primer to localized areas of exposed substrate.

Standard deviation: A measure of the precision of a reading; the spread of the deviation from the mean. The smaller the standard deviation, the more precise the analysis. The standard deviation is calculated by first obtaining the mean, or the arithmetic average, of all of the readings. A formula is then used to calculate how much the individual values vary from the mean—the standard deviation is the square root of the arithmetic average of the squares of the deviation from the mean. Many hand calculators have an automatic standard deviation function. See also **Mean**.

Standard reevaluation schedule (SRS): A schedule that determines the frequency that reevaluations should be performed on a property.

Standard reference material (SRM): A certified reference material produced by the National Institute of Standards and Technology (U.S. Department of Commerce) and characterized for absolute content independent of analytical method. See also **Certified reference material**.

Subsample: A representative portion of a sample. A subsample may be either a field sample or a laboratory sample. A subsample is often combined with other subsamples to produce a composite sample. See also **Composite sample**.

Substrate: A surface on which paint, varnish, or other coating has been applied or may be applied. Examples of substrates include wood, plaster, metal, and drywall.

Substrate effect: The radiation returned to an XRF analyzer by the paint, substrate, or underlying material, in addition to the radiation returned by any lead present. This radiation, when counted as lead x-rays by an XRF analyzer contributes to substrate equivalent lead (bias). The inspector may have to compensate for this effect when using XRF analyzers. See also **XRF analyzer**.

Substrate Equivalent Lead (SEL): The XRF measurement taken on an unpainted surface; used to calculate the corrected lead concentration on a surface by using the following formula: Apparent Lead Concentration–Substrate Equivalent Lead = Corrected Lead Concentration. See also **Apparent Lead Concentration (ALC)**, **Corrected Lead Concentration (CLC)**, and **XRF analyzer**.

Target housing: Any residential unit constructed before 1978, except dwellings that do not contain bedrooms or dwellings that were developed specifically for the elderly or persons with disabilities—unless a child younger than 6 resides or is expected to reside in the dwelling. In the case of jurisdictions that banned the sale or use of lead-based paint before 1978, the Secretary of HUD may designate an earlier date for defining target housing.

Targeted sample: A sample of dwelling units selected from an apartment building or housing development using information supplied by the owner. The units selected are likely to have the greatest probability of containing lead-based paint hazards. A

LEAD GLOSSARY

targeted sample is usually selected for performing risk assessments in multifamily housing when it is not possible to select a worst-case sample. See also **Worst-case sample** and **Random sample**.

TCLP: See **Toxicity Characteristic Leaching Procedure (TCLP)**.

Tertiary prevention: Providing medical treatment to children with elevated blood lead levels to prevent more serious injury or death.

Testing combination: A unique surface to be tested that is characterized by the room equivalent, component, substrate, and visible color.

Test location: A specific area on a testing combination where XRF instruments will test for lead-based paint.

Toxicity Characteristic Leaching Procedure (TCLP): A laboratory test to determine if excessive levels of lead or other hazardous materials could leach from a sample into groundwater; usually used to determine if waste is hazardous based on its toxicity characteristics.

Trained: Successful completion of a training course in a particular discipline. For lead hazard control work, the training course must be accredited by EPA or by an EPA-approved State program, pursuant to Title IV of the Toxic Substances Control Act.

Transporter: A person who transports hazardous waste, requiring a manifest under 40 CFR Part 260.10, within the United States by air, rail, highway, or water.

Treatment: In residential lead-based paint hazard control work, any method designed to control lead-based paint hazards. Treatment includes interim controls, abatement, and removal. Hazardous waste "treatment" is a method, technique, or process (such as neutralization) that is designed to change the physical, chemical, or biological character or composition of hazardous waste to neutralize it; render it nonhazardous or less hazardous; recover it; make it safer to transport, store, or dispose; or allow for easier recovery, storage, or volume reduction.

Treatment, Storage, and Disposal (TSD) facility: A facility licensed to handle hazardous waste.

Trisodium phosphate (TSP) detergent: A detergent that contains trisodium phosphate.

Trough: See **Window trough**.

Truck-mounted vacuum unit: A vacuum system whose components, except for hoses and attachments, are located outside the building undergoing dust removal. The exhaust is vented outside so that the interior dust is not disturbed.

TSD: See **Treatment, Storage, and Disposal (TSD) facility**.

TSP: See **Trisodium phosphate (TSP) detergent**.

µg (or ug): Micrograms. The prefix micro means 1/1,000,000 (or one-millionth); a microgram is 1/1,000,000 of a gram and 1/1,000 of a milligram; equal to about 35/1,000,000,000 (35 billionths) of an ounce (an ounce is equal to 28,400,000 µg).

Urethane-modified alkyd: An alkyd molecule that has been chemically modified by the incorporation of a urethane; a coating,

often a varnish, that uses a urethane-modified alkyd resin in the binder.

Useful life: The life expectancy of a coating before it requires refinishing or some other form of maintenance.

VOC: See **Volatile Organic Compound (VOC)**.

Volatile Organic Compound (VOC): Substances that vaporize or evaporate from a coating during the coating or curing process.

Walk-off mat: A washable, fibrous material (preferably with a rubber or vinyl backing) positioned at main entryways to reduce transport of lead dust and lead soil into a building or residence.

White lead: A white pigment, usually lead carbonate. See also **Lead carbonate**.

Window sill: See **Interior window sill**.

Window stool: See **Interior window sill**.

Window trough: For a typical double-hung window, the portion of the exterior window sill between the interior window sill (or stool) and the frame of the storm window. If there is no storm window, the window trough is the area that receives both the upper and lower window sashes when they are both lowered. Sometimes inaccurately called the window "well." See also **Window well**.

Window well: The space that provides exterior access and/or light to a window that is below grade, i.e., below the level of the surrounding earth or pavement. See also **Window trough**.

Worker: An individual who has completed training in an accredited program to perform lead-based paint hazard control in housing.

Worksite: Any interior or exterior area where lead-based paint hazard control work takes place.

Worksite preparation level: A set of measures designed to protect residents and the environment from leaded dust, paint chips, or other forms of lead contamination through the erection of barriers and the establishment of access control, resident relocation or movement restrictions, warning signs, ventilation, and other measures.

Worst-case sample: A sample of dwelling units having the greatest probability of containing lead-based paint hazards selected by a risk assessor on the basis of a visual examination of all dwelling units in a housing development or apartment building. See also **Targeted sample** and **Random sample**.

XRF analyzer: An instrument that determines lead concentration in milligrams per square centimeter (mg/cm²) using the principle of x-ray fluorescence (XRF). Two types of XRF analyzers are used—direct readers and spectrum analyzers. In these *Guidelines*, the term XRF analyzer only refers to portable instruments manufactured to analyze paint, and does not refer to laboratory-grade units or portable instruments designed to analyze soil.