ABC Environmental

LEAD HAZARD RISK ASSESSMENT & LIMITED LEAD-BASED PAINT TESTING REPORT

PERFORMED AT:

Private Residence (William Jones, Occupant)
123 Olympic Street
Coolsville, Anystate 12345

PREPARED FOR:

Mr. Bruce Smith
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Coolsville, Anystate 12345

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PREPARED BY:

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Project No.: XXXXX

This sample risk assessment report was prepared by Richard Baker of Baker Environmental Services, Lenexa, KS.

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ENVIRONMENTAL CONSULTANT:
ABC ENVIRONMENTAL

PROJECT CONTACT: _____

Name Date

EXECUTIVE SUMMARY

As a result of the Lead Hazard Risk Assessment and the limited Lead-Based Paint Testing (Assessment) conducted on 2/14/02, it was found that lead-based surface coatings (paint) and lead hazards were present on the subject property as of the date of the Assessment. The analytical results from this Assessment effort identified the following lead-based paint (LBP) and Lead hazards, as defined by EPA and/or HUD standards:

LBP

- Paint on All painted Exterior Components of the house, including the front porch

Existing Lead-Based Paint Hazards and Potential Lead Hazards

The following areas are coated with Lead-Based Paint (LBP) that is *deteriorated* and currently present existing lead-based paint hazards. All component substrates are wood.

- All exterior windows (windows are in fair condition)
- Roof fascia of house
- SW Bedroom door and door casing

A dust hazard was identified on the bathroom floor.

No soil lead hazards were identified.

The following areas are coated with LBP that is *intact* and that do not currently present lead hazards. However, the upcoming renovation plans include work inside the house and scraping and repainting the exterior. If these renovations occur, lead-safe work practices will need to be implemented during the project to ensure that lead hazards are not created.

- LBP on the exterior siding
- Front door and casing
- All exterior roof fascia and trim
- LBP on all front porch components (floor, columns, frame, railing, door)
- Bathroom wall
- Kitchen wall

The planned renovation includes disturbance of the following components that do not contain lead-based paint:

- Floors that were tested throughout the house
- Interior doors that were tested (except SW Bedroom)
- Interior walls in bedrooms and living room

Please remember that all identified LBP and Lead Hazards should always be properly addressed by professionally trained, experienced, and/or licensed lead workers.

Following is a report of the information collected during this Assessment:

IDENTIFYING INFORMATION

A Lead Hazard Risk Assessment and Limited LBP Testing (Assessment) was conducted at 1234 Main Street, in Coolsville, Anystate for Mr. Bruce Smith on 2/14/02. The Assessment was conducted by Susan McGee, a Certified Risk Assessor (Anystate License # KS00-011110). The purpose of the Assessment was to identify the presence of lead hazards on and/or in a limited number of surfaces inside and outside the residence, as well as to identify the presence of deteriorated lead-based paint (LBP) and LBP that may be disturbed during planned renovations. The City of Coolsville is providing funds from the U.S. Department of Housing and Urban Development to perform a remodeling project at this home. This Assessment was also completed to help the City and the homeowner determine if any of the upcoming HUD-funded renovation activities have the potential to create additional lead hazards. Based upon conversations with the Owner and the City of Coolsville Housing Agency (Client), to the knowledge of this Assessor, there has not been any previous LBP testing at this home.

As part of the Assessment, a visual survey of the property and structure was conducted, dust wipe sampling was performed on a limited number of interior surfaces, and composite soil samples were collected. In addition, limited on-site paint testing using an x-ray fluorescence (XRF) lead-in-paint analyzer was performed.

The Assessment was contracted for by Mr. Bruce Smith, City of Coolsville, Coolsville, Anystate 12345, (123) 456-7891. Further information concerning this project can be obtained from this contracting agency. The results of the limited assessment are summarized below.

IDENTIFIED LEAD HAZARDS

While the building and its paint was generally in good condition during the Assessment, the XRF results from the deteriorated paint that was tested showed that LBP hazards exist, as defined in the Residential LBP Hazard Reduction Act of 1992 (Title X) and as defined by the Environmental Protection Agency (EPA) regulation published in the January 5, 2001 Federal Register. The XRF results indicate that lead levels above EPA and/or US Department of Housing and Urban Development (HUD) criteria exist in the following locations:

Existing Lead Hazards

The following areas are coated with Lead-Based Paint (LBP) that is *deteriorated* and currently present existing lead-based paint hazards. All component substrates are wood.

1. All exterior windows (windows are in fair condition)
2. Roof fascia of house
3. SW Bedroom door and casing

Potential Lead Hazards

1. LBP is present on the exterior siding
2. LBP is present on the front door and casing
3. LBP is present on all exterior roof fascia and trim.
4. LBP is present on all front porch components.
5. LBP is present on bathroom and kitchen walls

A listing of environmental sampling locations and their associated lead contamination levels can be found in the sections addressing the analytical laboratory results for paint, dust, and soil.

Hazard control options and associated cost estimates for the areas or components identified with LBP or lead hazards are also discussed later in this report. In an effort to aid in the interpretation of the listed findings a glossary of terms and a list of publications and resources addressing lead hazards and their health effects is included at the end of this report.

ONGOING MONITORING

Ongoing monitoring is necessary in all dwellings in which LBP is known or assumed to be present. At these dwellings, the very real potential exists for LBP hazards to develop. Hazards can develop by means such as, but not limited to: the failure of lead hazard control measures; previously intact LBP becoming deteriorated; dangerous levels of lead-in-dust (dust lead) re-accumulating through friction, impact, and deterioration of paint; or, through the introduction of contaminated exterior dust and soil into the interior of the structure. Ongoing monitoring typically includes two different activities: re-evaluation and annual visual surveys. A re-evaluation is a risk assessment that includes limited soil and dust sampling and a visual evaluation of paint films and any existing lead hazard controls. Re-evaluations are supplemented with visual surveys by the Client, which should be conducted at least once a year. Client conducted visual surveys do not replace the need for professional re-evaluations. Visual surveys should confirm that all Paint with known or suspected LBP are not deteriorating, that lead hazard control methods have not failed, and that structural problems do not threaten the integrity of any remaining known, assumed or suspected LBP. The partial table below is taken from **Table 6.1, Standard Re-evaluation Schedules,** as found in the HUD publication entitled; ***Guidelines for the Evaluation and Control of LBP Hazards in Housing,*** dated June 1995, with September 1997 revisions. It is intended as a guideline for the Client to assess the condition of areas where hazard control activities occurred.

Factors at this residence require the use of Ongoing Monitoring Schedule item number three (3), to dictate monitoring protocol. Visual surveys by the Client should occur on at least a yearly basis for all painted surfaces. All surfaces that have undergone the hazard control strategy of Interim Controls, Encapsulation or Enclosure should also be checked during this survey. If components are replaced (windows), no re-evaluation or visual survey would be needed, since the LBP would have been removed with the old windows. Please refer to your community development agency, housing authority, or other applicable agency for additional local/regional regulations and guidelines governing re-evaluation activities.

Standard Re-evaluation Schedule

Schedule	Original Evaluation Results	Action taken	Re-evaluation Frequency & Duration	Visual Survey Schedule
3	The average of leaded dust levels on all floors, interior windows, or window troughs sampled exceeds the applicable standard, but by less than a factor of 10.	A. Interim controls or a mixture of interim controls and abatement (not including window replacement). B. Mixture of interim controls and abatement plus replacement of all windows with lead hazards. C. Abatement of all lead-	1-2 Years. 3 Years. 4 Years.	Annually and whenever information indicates a possible problem except for encapsulants. The first visual survey of encapsulants should be done one month after clearance; the second should be done 6 months later and annually thereafter.

		based paint hazards, but not all lead-based paint. D. Abatement of all lead-based paint using encapsulation or enclosure. E. Removal of all lead-based paint.	None. None.	None.

DISCLOSURE REGULATIONS

A copy of this complete report must be made available to new lessees (tenants) and/or must be provided to purchasers of this property under Federal law before they become obligated under any future lease or sales contract transactions (Section 1018 of Title X – found in 24 CFR Part 35 and 40 CFR Part 745), until the demolition of this property. Landlords (Lessors) and/or sellers are also required to distribute an educational pamphlet developed by the EPA entitled ***"Protect Your Family From Lead in Your Home"*** and include standard warning language in their leases or sales contracts to ensure that parents have the information they need to protect their children from LBP hazards.

FUTURE REMODELING PRECAUTIONS

It should be noted that during this Assessment, a limited number of areas were tested for the presence of LBP. All LBP, dust, and soil hazards that were identified are addressed in this report. However, LBP, dust lead hazards, and/or soil lead hazards may be present at other locations of the property. Additional paint testing should precede any future remodeling activities that occur at any untested areas. Additional dust and/or soil sample collection and analysis should follow any hazard control activity, repair, remodeling, or renovation effort, and any other work efforts that may in any way disturb LBP and/or any lead containing materials. These Assessment activities will help the Client and owner to ensure the health and safety of the occupants and the neighborhood. Details concerning lead safe work techniques and approved hazard control methods can be found in the HUD publication entitled: ***"Guidelines for the Evaluation and Control of LBP Hazards in Housing"*** (June 1995 & 1997 Revision).

CONDITIONS & LIMITATIONS

Staff of ABC Environmental. has performed the Client requested tasks listed above in a thorough and professional manner consistent with commonly accepted standard industry practices, using state of the art practices and best available known technology, as of the date of the assessment. ABC Environmental cannot guarantee and does not warrant that this Assessment/Limited LBP Testing has identified all adverse environmental factors and/or conditions affecting the subject property on the date of the Assessment. ABC Environmental cannot and will not warrant that the Assessment/Limited Testing that was requested by the client will satisfy the dictates of, or provide a legal defense in connection with, any environmental laws or regulations. It is the responsibility of the client to know and abide by all applicable laws, regulations, and standards.

The results reported and conclusions reached by ABC Environmental are solely for the benefit of the client. The results and opinions in this report, based solely upon the conditions found on the property as of the date of the Assessment, will be valid only as of the date of the Assessment. ABC Environmental assumes no obligation to advise the client of any changes in any real or potential lead hazards at this residence that may or may not be later brought to our attention. Further conditions and limitations to this contracted report are included in the general terms and conditions supplied to the client with the contract for services.

SITE INFORMATION AND FIELD TESTING

RESIDENT QUESTIONNAIRE

A resident questionnaire was completed as part of the Assessment, to help the Client identify particular use patterns, which may be associated with potential LBP hazards, such as opening and closing windows painted with LBP. The answers to the questionnaire were obtained during an interview with the occupants, Mr. and Mrs. Homeowner. Following is a summary of the information obtained during that interview:

Children in the Household:	2 (Ages 1, 3)
Children's bedroom locations:	SW bedroom
Children's eating locations:	Kitchen
Primary interior play area(s):	Living Room
Primary exterior play area(s):	Back Yard; on and near play equipment
Toy Storage:	NA
Pets:	2 cats (indoor)
Children's blood lead testing history:	NA
Observed chewed surfaces:	NA
Women of child bearing age:	1
Previous lead testing:	None
Most frequently used entrances:	Front door
Most frequently opened windows:	Kitchen and Living Room
Structure cooling method:	Central Air Conditioning
Gardening – type and location(s):	Previous vegetable garden (in back yard)
Plans for landscaping:	None
Cleaning regiment:	Weekly
Cleaning methods:	Mopping, sweeping, dusting, vacuuming
Recently completed renovations:	None recent
Demolition debris on site:	None
Resident(s) work in lead industry:	None
Planned renovations:	A preliminary Scope of Work document for this residence was supplied prior to the onset of the Assessment. A copy of that document is included in Appendix E of this report. The planned renovation is through the City of Coolsville program. A complete list of pending renovation activities can be obtained from Mr. Bruce Smith, City of Coolsville, Anystate.

BUILDING CONDITIONS SURVEY

Date of Construction:	1937
Apparent Building Use:	Residential
Setting:	Residential
Front Entry Faces:	East
Design:	Bungalow
Construction Type:	Wood framed, wood shingles

Lot Type:	Slight slope, drains to the east
Roof:	Fair (curled shingles), no apparent roof leaks
Foundation:	Good, no known basement leaks or visible foundation cracks
Front Lawn Condition:	Approx. 10% bare soil
Back Lawn Condition:	Aprox. 20% bare soil; existence of play structure
Drip Line Condition:	Some Paint chips along the driplines
Site Evaluation:	Very good
Exterior Structural Condition:	Exterior structural is good and paint condition is fair.
Interior Structural Condition:	Excellent
Overall Building/Site Condition:	Very Good

PAINT CONDITION SURVEY

Please Note: EPA and HUD have provided a specific definition for the term "deteriorated paint." Deteriorated paint is defined as "any interior or exterior paint or other coating that is peeling, chipping, chalking or cracking, or any paint or coating located on an interior or exterior surface or fixture that is otherwise damaged or separated from the substrate." This definition is most typically associated with surface conditions only. Usage of this term in describing conditions other than those associated with surface coatings are not known to be defined by EPA or HUD.

IDENTIFIED DETERIORATED PAINT, PAINT CONDITIONS, LEAD CONTENT, & MOST APPARENT CAUSE OF DETERIORATION:

- Paint on the exterior windows, portions of porch and fascia are peeling over wood. Testing in these areas revealed lead levels above HUD standards. Moisture and age are the most likely causes of the damage.

The remaining paint exhibited no apparent signs of deterioration, as of the date of the Assessment.

PAINT SAMPLING AND TESTING

Limited LBP Testing, conforming with HUD Guidelines 24 CFR 35 Section 35.930 (c), (d) [**Optional:** and the requirements of American Society of Testing and Materials (ASTM) standard PS 95-98, Standard Provisional Practice for Quality Systems for Conducting In Situ Measurements of Lead Content in Paint or Other Coatings Using Field-Portable X-Ray Fluorescence (XRF) Devices] was accomplished at this residence on surfaces found to have deteriorated paint and/or where it was indicated to the Assessor that planned renovation would occur. No paint chip samples were taken. On 2/14/02, a total of 23 tests (assays) were taken at a limited number of specified surfaces on the inside and outside of the residence using an x-ray fluorescence analyzer. Deteriorated paint and areas that were specified to be disturbed during the planned renovation project were tested. Lead concentrations that meet or exceed the HUD published levels identified as being potentially dangerous (e. g., greater than or equal to 1.0 milligrams per centimeter square [$\geq$ 1.0 mg/cm^2]) were encountered on the exterior siding and trim, the exterior window components and trim, and all front porch components.

Some of the remaining test locations exhibited lead-in-paint levels below the HUD levels, but in great enough quantities to be detectable by our XRF analyzer. It should be noted that lead concentrations (in paint) that are less than the levels that identify a surface coating as LBP still have the potential of causing lead poisoning. Should these or any potential LBP painted components and/or surfaces be disturbed in any manner that generates dust, extreme care must be taken to limit its spread. **It should be assumed that any and all painted surfaces, components, or surfaces not requested to be tested as part of this investigation, or any previous investigations, are coated with LBP, and that renovation or repair activities in these areas dictate the use of safe work practices that limit dust generation and area contamination.**

Testing was performed by Susan McGee, a State of Anystate certified Risk Assessor, using the Radiation Monitoring Device (RMD) LPA-1 X-ray Fluorescence analyzer (S/N 12934, State of Anystate license #XX-XXXX). Please refer to the appendices for the detailed XRF, dust and soil sampling analytical reports.

INTERIOR DUST SAMPLING

A total of 6 single surface dust wipe samples were collected in an effort to help to determine the levels of lead-containing dust on the interior windowsills and floors. These samples were collected from areas most likely to be lead contaminated if lead-in-dust is present. These samples were collected in accordance with the requirements of ASTM Standard E-1728, Standard Practice for Field Collection of Settled Dust Samples Using Wipe Sampling Methods for Lead Determination by Atomic Spectrometry Techniques. EPA, HUD and State of Anystate regulations define the following as dangerous levels for lead dust in residences: floors – $\geq$40 μg/ft^2 (micrograms per square foot); interior windowsills – $\geq$250 μg/ft^2; and, interior window troughs – $\geq$400 μg/ft^2. Please refer to ***Appendix B – Dust Wipe Analytical Results*** for the laboratory reports and to ***Appendix I – Lead and Lead Safety Information and Resources*** for a list of publications and resources addressing lead hazards and their health effects; both are located at the end of this report. As indicated below, **dangerous levels of leaded dust, as defined by HUD, was detected in one sample. This sample was obtained from the bathroom floor and constitutes a dust-lead hazard in that room.**

	Type	Location	Component	Sample Size (ft^2)	Sample Location	Test Results ($\mu g/ft^2$)
1	Dust Wipe	Bathroom	Floor	1.00	Floor, Center of room.	80.0
2	Dust Wipe	Living Room	Sill	0.66	Wood, Wall A, sill.	41.1
3	Dust Wipe	Kitchen	Floor	1.00	Carpet, Center of room.	<20.0
4	Dust Wipe	Kitchen	Sill	0.50	Wood, Wall D, sill.	<40.0
5	Dust Wipe	Master Bedroom	Floor	1.00	Carpet, Center of room.	<20.0
6	Dust Wipe	Master Bedroom	Sill	0.74	Wood, Wall C, sill	<27.0

Laboratory Information:

Anytown Laboratories	2222 West Street Anytown, Anystate 00000 (800) 234-5678
Dust Wipe Analysis Protocol:	EPA Method SW846, 7420, implementing a microwave-assisted digestion process.
Dust Wipe medium used:	Lead-Wipes, ASTM # E1792-96a
National Lead Laboratory Accreditation Program Serial number:	#XXXXXX

SOIL SAMPLING AND LABORATORY INFORMATION

Two (2) composite soil samples were collected at this residence in accordance with the requirements of ASTM Standard E-1727, Standard Practice for Field Collection of Soil Samples for Lead Determination by Atomic Spectrometry Techniques. A Composite sample is a sample containing soil from a stated number of locations mixed together to form a Composite sample. The first sample consisted of soil from four locations in the front yard flower garden at 1' on center (O.C.). The second sample was collected from four separate locations in the B (south) sideyard at 1' O.C.. The samples were collected from bare soil areas only. The analytical results did not identify lead concentrations at or above the levels that EPA and HUD identifies as dangerous. See the following table for a summary of the soil sampling results. Please refer to ***Appendix C – Soil Sample Analytical Data*** for the detailed analytical reports. Testing data in **bold face** indicates lead levels at or above the EPA Dangerous Levels of Lead regulations that were published on January 5, 2001.

	Type	Location	Comments	Test Results ($\mu g/g$)
7	Composite	Front flower garden	Bare Soil sample	990
8	Composite	Backyard under play equipment – play area	Bare Soil sample	260

Laboratory Information:

Anytown Laboratories	2222 West Street Anytown, Anystate 00000 (800) 234-5678
Soil Analysis Protocol:	EPA Method SW846, 7420, implementing a microwave-assisted digestion process.
National Lead Laboratory Accreditation Program Serial number:	#XXXXXX

LEAD HAZARD CONTROL OPTIONS AND COST ESTIMATES

Lead-safe work practices and worker/occupant protection practices complying with current EPA, HUD and OSHA standards will be necessary to safely complete all work involving the disturbance of LBP coated surfaces and components. In addition, any work considered Lead hazard control will enlist the use of interim control (temporary) methods and/or abatement (permanent) methods. It should be noted that all lead hazard control activities have the potential of creating additional hazards, or even creating hazards that were not present before. All persons and/or firms performing lead hazard control activities must have received proper training in Lead-Safe Work Practices and/or Lead Abatement. Details for the listed lead hazard control options and issues surrounding occupant/worker protection practices can be found in the publication entitled: ***Guidelines for the Evaluation and Control of LBP Hazards in Housing (June 1995 & 1997 Revision)*** published by the HUD, as well as in the Occupational Safety and Health Administration (OSHA) regulations found in 29 CFR, Part 1926.62, known as the OSHA Lead Exposure in Construction Industry Standard.

The associated cost estimates, unless otherwise noted, include the labor and materials to accomplish the stated activity and most additional funds typically found to be necessary to complete worker protection, site containment, and cleanup procedures. These are approximate estimates only and due to a variety of potential factors, may not accurately reflect all local cost factors. A precise estimate must be obtained from a certified LBP abatement contractor or a contractor trained in lead safe work practices. Properly trained and/or licensed persons, as well as properly licensed firms (as mandated) should accomplish all abatement/interim control activities conducted at this residence.

Interim controls, as defined by HUD, means a set of measures designed to temporarily reduce human exposure to LBP hazards and/or lead containing materials. These activities include, but are not limited to: component and/or substrate repairs; paint and varnish repairs; the removal of dust-lead hazards; renovation; remodeling; maintenance; temporary containment; placement of seed, sod or other forms of vegetation over bare soil areas; the placement of at least 6 inches of an appropriate mulch material over an impervious material, laid on top of bare soil areas; the tilling of bare soil areas; extensive and specialized cleaning; and, ongoing LBP maintenance activities.

Abatement, as defined by HUD, means any set of measures designed to permanently eliminate LBP and/or LBP hazards. The product manufacturer and/or contractor must warrant abatement methods to last a minimum of twenty (20) years, or these methods must have a design life of at least twenty (20) years. These activities include, but are not necessarily limited to: the removal of LBP from substrates and components; the replacement of components or fixtures with lead containing materials and/or lead containing paint; the permanent enclosure of LBP with construction materials; the encapsulation of LBP with approved products; the removal or permanent covering (concrete or asphalt) of soil-lead hazards; and, extensive and specialized cleaning activities.

SPECIAL CLEANING PRECEDING LEAD HAZARD CONTROL ACTIVITIES

a) Before any lead hazard control activities begin, the structure and site must be inspected and pre-cleaned following HUD specified cleaning protocols, as detailed in the Guidelines for the Evaluation and Control of LBP Hazards in Housing (June 1995 & 1997 Revision), published by the U.S. Department of Housing and Urban Development. Some of the required steps include removing large debris and paint chips followed by HEPA vacuuming of all horizontal surfaces (floors, windowsills, troughs, etc.). The cleaning protocols described in this publication can assist the contractor in doing a preliminary cleaning and improving the chances of passing clearance

inspections after remediation.

HAZARD 1: Scraping LBP on the exterior siding and trim

a) INTERIM CONTROLS - STABILIZATION: A lead hazard could be created if the exterior siding is prepared for repainting (scraped) during the upcoming renovations. Any work that will disturb these surfaces must be carried out by properly trained lead workers, following lead-safe work practices. Following preparation work, the lead-based paint coatings on the exterior siding and trim may be addressed by stabilizing the surfaces with new paint. This activity has the potential to create a high volume of lead-contaminated dust, and extra care must be taken by the contractor to limit and contain the dust generated.

Stabilization $XX/S.F.

b) ABATEMENT - ENCLOSURE: Another safe and effective method of remediation in this area would be enclosing all exterior siding and trim with vinyl siding and pre-finished aluminum wrap materials. Caulk should be used to seal the bottom of the siding to the house and prevent leaded dust from falling through to the ground. This method usually generates smaller amounts of lead contaminated dust than does scraping and re-painting, and would permanently enclose the surfaces, eliminating future hazards. Even though the potential for leaded dust contamination is generally less with this method of remediation, special attention to work practices will be necessary to limit dust generation.

Siding/Trim Enclosure (per square foot) $XX/S.F.

HAZARD 2: Scraping LBP on all exterior window components and trim

a) INTERIM CONTROLS - STABILIZATION: A lead hazard could be created if the exterior window components and trim is prepared for repainting (scraped) during the upcoming renovations. Any work that will disturb these surfaces must be carried out by properly trained lead workers, following lead-safe work practices. Following preparation work, the lead-based paint coatings on the exterior window components and trim may be addressed by stabilizing the surfaces with new paint. This activity has the potential to create a high volume of lead-contaminated dust, and extra care must be taken by the contractor to limit and contain the dust generated.

Stabilization $XX/S.F.

b) ABATEMENT - REPLACEMENT: Installation of replacement windows is another possible remediation option. This involves removing the exterior window components and installing new replacement windows. This activity has the potential to create a high volume of lead-contaminated dust. All windows must be sealed off from the inside of the house during the duration of the work and extra care must be taken by the contractor to limit and contain the dust generated.

Removal of exterior window components and installation of replacement windows. $XXX/ea.

HAZARD 3: Scraping LBP on all painted front porch components (floor, columns, frame, door)

a) INTERIM CONTROLS - STABILIZATION: A lead hazard could be created if the front porch components are prepared for repainting (scraped) during the upcoming renovations. Any work that will disturb these surfaces must be carried out by properly trained lead workers, following lead-safe work practices. Following preparation work, the lead-based paint coatings on the front porch components may be addressed by stabilizing the surfaces with new paint. This activity has the potential to create a high volume of lead-contaminated dust, and extra care must be taken by the

contractor to limit and contain the dust generated.

Stabilization – Per Square Foot $XXX/S.F.

b) ABATEMENT - REPLACEMENT: The removal and replacement of all of the porch components is another possible option for lead hazard control. This remediation option has the potential to generate extremely high amounts of lead contaminated dust and would require extensive containment.

Replacement of all porch components $XXX- $XXX

HAZARD 4: Removal of bathroom floor dust-lead hazard

a) INTERIM CONTROLS – REMOVAL OF DUST LEAD HAZARD AND STABILIZATION: An existing dust-lead hazard on the bathroom floor must be removed prior to any other rehabilitation activities in this room. This room must be carefully inspected and cleaned following HUD-specified cleaning protocols. As the area is prepared for replacement of the plumbing fixtures and repainting, lead-safe work practices must be used. All of the required procedures for control and containment of dust to this room must be used. Any work that will disturb these surfaces must be carried out by properly trained lead workers. Following preparation work, the lead-based paint coatings on the bathroom walls may be addressed by stabilizing the surfaces with new paint. This activity has the potential to create a high volume of lead-contaminated dust, and extra care must be taken by the contractor to limit and contain the dust generated.

Removal of leaded dust and Stabilization of bathroom walls $XXX/S.F.

b) ABATEMENT - REPLACEMENT: The removal and replacement of all of the bathroom walls components is another possible option for lead hazard control. This remediation option has the potential to generate extremely high amounts of lead contaminated dust and would require extensive containment. Abatement would normally not be the most feasible or cost-effective approach for this room, but remains an option.

Replacement of painted components in bathroom $XXXX

SPECIAL CLEANING FOLLOWING LEAD HAZARD CONTROL ACTIVITIES

a) Following all lead hazard control activities, the structure and site must be inspected and cleaned following HUD indicated cleaning protocols, as detailed in the Guidelines for the Evaluation and Control of LBP Hazards in Housing (June 1995 & 1997 Revision), published by the U.S. Department of Housing and Urban Development. The cleaning protocols described in this publication can assist the contractor in thoroughly, properly and safely cleaning the site.

Interim Control – Follow all lead-safe work practice procedures to reduce dust lead content to less than acceptable clearance level (40 micrograms per square foot for floors). Cleaning must be accomplished following the HUD indicated cleaning protocols, as detailed in the Guidelines for the Evaluation and Control of LBP Hazards in Housing (June 1995 & 1997 Revision), published by the U.S. Department of Housing and Urban Development. The cleaning protocols described in this publication can assist the contractor in thoroughly, properly and safely cleaning the site.

ADDITIONAL NOTES:

Clean up of the remediated areas should be accomplished on an ongoing basis throughout all activities that impact or disturb any known or assumed lead containing materials (LCM) and Paint. When a material, surface

coating, substrate, component, or surface is to be impacted as a result of any activity and the lead content is not known, those areas and/or items should be assumed to contain lead-based paint. Accumulation of debris is not recommended, and all plastic drop cloths must be replaced and disposed of properly each day. All trash must be promptly and properly removed from the site and the area left clean and as close to original condition as possible. Following the HUD guidelines will help increase the chances of attaining HUD and State of Anystate lead-in-dust clearance levels.

Please remember that lead testing occurred at a limited number of locations in the structure; LBP and/or LCM could still be present in the unit at areas not tested as part of this Lead Hazard Risk Assessment. Great care should be taken by the Client and Contractor if, at a later date, any repair, maintenance, remodeling or renovation activities disturb any paint where the concentrations of lead are not known. In lieu of any additional testing, all surfaces and Paint should be assumed to contain lead-based paint.

APPENDIX A
XRF LEAD-BASED PAINT TESTING RESULTS

APPENDIX A - XRF ANALYTICAL SAMPLING RESULTS FOR 1234 MAIN STREET, COOLSVILLE, ANYSTATE 12345									
2/14/02									
Reading Number	Location [1]	Side	Structure	Feature	Condition	Substrate	Color	Result	Lead (mg/cm2)
1	LR	A	Wall	Interior	Good	Drywall	White	NEG	0.5
2	Back Porch	D	Exterior Door	Interior side	Good	Wood	White	NEG	0.6
3	Front Porch	A	Column	Exterior	Fair	Wood	Tan	POS	6.7
4	Front Porch	A	Railing		Fair	Wood	Tan	POS	6.7
5	Front Porch	A	Ceiling		Fair	Wood	Tan	POS	6.7
6	Front Porch	A	Wall		Fair	Wood	Tan	POS	6.7
7	Front Porch	A	Posts		Fair	Wood	Tan	POS	6.7
8	Front Porch	A	Stairs	Treads	Fair	Wood	Tan	POS	6.7
9	DR-exterior	A	Window	Sash	Fair	Wood	Tan	POS	11.8
10	Exterior	A	Window	Casing	Fair	Wood	Tan	POS	5.4
11	Exterior	D	Wall	Siding	Good	Wood	Green	POS	8.5
12	Exterior	B	Wall	Siding	Good	Wood	Green	POS	5.3
13	Front Porch	A	Floor		Good	Concrete	Gray	POS	2.6
14	Front Door	A	Exterior side	Door	Poor	Wood	White	POS	1.9
15	Front Door	A	Casing	Casing	Poor	Wood	White	POS	1.9
16	Bathroom	B	Wall		Fair	Drywall	Blue	POS	9.1
17	Bathroom	B	Wall	Baseboard	Good	Wood	Blue	NEG	0.1
18	Bathroom	B	Wall	Shoemldng	Good	Wood	Blue	NEG	0.1
19	Mstr Bdrm	Center	Floor		Good	Wood	Brown	NEG	0.3
20	Mstr Bdrm	Center	Wall		Good	Drywall	White	NEG	0.2
21	Mstr Bdrm	Center	Wall	Baseboard	Good	Wood	White	NEG	0.2
22	Mstr Bdrm	Center	Wall	Top Moldng	Good	Wood	White	NEG	0.1
23	Mstr Bdrm	Center	Ceiling		Good	Drywall	White	NEG	0.1
24	Mstr Bdrm	B	Door		Good	Wood	White	NEG	0.1
25	SW Bdrm	A	Door		Good	Wood	White	POS	5.2
26	SW Bdrm	A	Door	Casing	Good	Wood	White	POS	9.5
27	SW Bdrm	B	Wall		Good	Drywall	Blue	NEG	0.8
28	SW Bedroom	B	Trim		Good	Wood	Blue	NEG	0.5
29	Kitchen	C	Exterior Door	Door - interior side	Good	Wood	White	NEG	0.3
30	Kitchen	D	Wall	Interior-next to refrig.	Good	Drywall	Yellow	POS	4.1
31	Back Prch	D	Wall	Interior	Good	Wood	White	NEG	0.7
32	Back Prch	B	Wall	Interior	Good	Drywall	White	NEG	0.3
33	Front Porch	A	Trim	Exterior SE corner	Good	Wood	Tan	POS	4.9
34	Exterior	A	Trim	Fascia-NE edge	Good	Wood	Tan	POS	4.7
35	Exterior	C	Wall	Siding	Good	Wood	Green	POS	2.8
36	Dining Room		Floor		Good	Wood	Brown	NEG	0.3

C-1	Calibration Verify	NIST Lead Paint Film Standard, 1.0 + .1, (Red NIST Film)						1.0
C-2	Calibration Verify	NIST Lead Paint Film Standard, 1.0 + .1, (Red NIST Film)						1.1
C-3	Calibration Verify	NIST Lead Paint Film Standard, 1.0 + .1, (Red NIST Film)						0.9
	1 See Sketch in Appendix A							

Performed by ABC Environmental, 920 Massachusetts Avenue, Poolsville, Anystate 12346-2868,

APPENDIX B
DUST WIPE SAMPLE ANALYTICAL DATA

ANYTOWN LABORATORIES

INCORPORATED

2222 West Street

Anytown, Anystate 00000 (555) 234-5678 · 800-ANY-LABS · (Fax) 111-2468

Excellence in Customer Service and Technology

AIHA/ELLAP 100100, NVLAP 0000, CAELAP 1111, RRLAP 1010

LABORATORY ANALYSIS REPORT

Lead Analysis by EPA 3050B/7420 Method

CLIENT #: ABC-123
CLIENT: ABC Environmental
ADDRESS: 7941 Westgate Street
Poolsville, Anystate 12346-2636
PO #: N/A

DATE COLLECTED: 2/14/02
DATE RECEIVED: 2/15/02
DATE ANALYZED: 2/15/92
DATE REPORTED: 2/15/02
SAMPLE TYPE: Wipe

PROJECT NAME: City of Coolsville
JOB LOCATION: 1234 Main Street, Coolsville, Anystate 12345

ALI Sample No	Client Sample No.	Sample Description	Sample Area (ft^2)	Dilution Factor	Total Lead (ug)*	Lead Concentration (ug/ft^2)
021559	1234-1	Bathroom floor-center	1.0	1	80.0	80.0
021560	1234-2	Living Rm Sill	.66	1	41.1	41.1
021561	1234-3	Kitchen Floor	1.00	1	<20.0	<20.0
021562	1234-4	Kitchen D Sill	1.00	1	<40.0	<40.0
021563	1234-5	Mstr Bdrm Floor	1.00	1	<20.0	<20.0
021564	1234-6	Mstr Bdrm Sill	0.74	1	<27.0	<27.0

QC – 18081	10.0 ppm Calibration Std			1,012.3	101.2%
QC – 18081	200 ug spike			210.7	105.4%
QC – 18081	5.0 ppm Calibration Std			521.7	104.4%
QC – 18081	Blank			<20.0	
QC – 18081	NIST 2710 Standard			569.7	103.0%

JUDITH JUNE

ANALYST: Judith June

Matthew Monday, CIH

Total No. of Pages in Report: 1

REVIEWED BY: Matthew Monday, CIH, Dept. Head

*Minimum Reporting Limit: 20 ug Total Lead. Effective 3/6/01, EPA Lead Hazard Standards: 40 ug/ft^2 for floors and 250 ug/ft^2 for interior window sills, 400 ug/ft^2 for window troughs. Industrial projects may have limits established per project. *For true values, assume two (2) significant figures.*

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LABORATORY ANALYSIS REPORT

Lead Analysis by EPA 3050B/7420 Method

CLIENT #: ABC-123
CLIENT: ABC Environmental
ADDRESS: 7941 Westgate Street
Poolsville, Anystate 12346-2636
PO #: N/A

DATE COLLECTED: 2/14/02
DATE RECEIVED: 2/15/02
DATE ANALYZED: 2/15/92
DATE REPORTED: 2/15/02
SAMPLE TYPE: Soil

PROJECT NAME: City of Coolsville
JOB LOCATION: 1234 Main Street, Coolsville, Anystate 12345

ALI Sample No	Client Sample No.	Sample Description	Sample Wt (mg)	Dilution Factor	Total Lead (ug)*	Lead Concentration (% by wt)	Lead Conc (ppm)
021565	1234-S1	Front Flower Garden	1,580	1	990	.067	670
021566	1234-S2	Backyard-under play equipment	1,275	1	560	.045	450

QC – 14669	10.0 ppm Calibration Std		967.2	96.7%	
QC – 14669	200 ug spike		196.0	98.0%	
QC – 14669	5.0 ppm Calibration Std		503.8	100.8%	
QC – 14669	Blank		>20.0		
QC – 14669	NIST 2710 Standard		541.8	97.9%	

William W. Webster
ANALYST: William W. Webster

Matthew Monday, CIH

Total No. of Pages in Report: 1 REVIEWED BY: Matthew Monday, CIH, Dept. Head

*Minimum Reporting Limit: 20 ug Total Lead. Effective 3/6/01, EPA Lead Hazard Standards: 40 ug/ft^2 for floors and 250 ug/ft^2 for interior window sills, 400 ug/ft^2 for window troughs. Industrial projects may have limits established per project. *For true values, assume two (2) significant figures.*

APPENDIX D
SITE AND FLOOR PLAN

Insert site and floor plans here indicating the locations of XRF testing, soil lead and dust lead sampling performed at this property.

APPENDIX E
SCOPE OF RENOVATION WORK, AS PROVIDED TO ASSESSOR

If applicable, insert governing authority's supplied scope of planned renovation work on this page and all additional pages necessary.

APPENDIX F
COPY OF RISK ASSESSOR'S LICENSE/CERTIFICATION

Insert copy of State/EPA Risk Assessor license/certification here.

APPENDIX G
COPY OF FIRM'S LEAD ACTIVITY LICENSE/CERTIFICATION

Insert copy of firm's lead activity license/certification here.

APPENDIX H
COPY OF XRF TRAINING CERTIFICATE AND LPA-1 PERFORMANCE CHARACTERISTICS SHEET

Insert copy of XRF training certificate here.

Insert PCS sheet here.

APPENDIX I
ADDITIONAL LEAD AND LEAD SAFETY RESOURCE DATA

"LEAD SPEAK" A BRIEF GLOSSARY

COMMON LBP TERMS

LBP: Any and all paint that contains at least 1 milligram of lead per square centimeter of surface area (1.0 mg/cm^2). This is infrequently expressed as 0.5% lead by weight and/or 5000 parts per million lead concentrations by dry weight.

LBP Hazards: Housing conditions that cause human exposure to unsafe levels of lead from paint. These conditions include, but are not necessarily limited to: deteriorated lead-based paint; friction, impact, or chewable surfaces; lead-contaminated dust; or, lead-contaminated soil.

Paint: Any and all paints, stains, varnishes, shellacs, epoxies, lacquers, polyurethanes, etc.

House Wall Identification Guide: The exterior wall that contains the front entry to the house is labeled as the A wall of the house. Proceeding clock-wise around the house label the remaining walls B, C, and D respectively. The interior room walls correspond to the exterior walls.

LEAD HAZARD EVALUATION METHODS

Visual Inspection: A visual evaluation of interior and exterior paint and surfaces in an effort to try to identify specific conditions that contributes to LBP hazards. A certified risk assessor or a Housing Quality Standards inspector trained in visual assessments should perform these inspections.

Paint Testing: Testing of specific surfaces that are coated with paint, by XRF (x-ray florescence) or lab analysis, to determine the lead content of these surfaces, performed by a certified LBP inspector or certified risk assessor

Risk Assessment: An on-site investigation to help determine the existence of LBP hazards. This can include paint testing, dust and soil sampling, water sampling and a visual inspection. The risk assessment report identifies lead hazards and potential options for lead hazard control. A certified risk assessor must conduct the assessment.

Clearance Examination: Clearance is performed after hazard reduction, rehabilitation, renovation, repair, modernization, or maintenance activities to determine if a unit is safe for occupancy. It involves a visual inspection, analysis of dust and soil samples, and preparation of a report. A certified risk assessor that is independent from the company or individual conducting the lead hazard control activities should conduct the clearance examination.

X-Ray Fluorescence Analyzer (XRF): This device, often called a XRF, is used to help identify levels of lead in paint without disturbing the painted surfaces themselves. The unit uses gamma radiation to measure the lead content in the paint on a per square centimeter basis. Users of this device must be specially trained and licensed as Lead Inspectors and be licensed by State radioactive material regulatory licensing agencies.

LEAD POISONING

Environmental Intervention Blood Lead Level (EIBLL): The level of lead in blood that requires intervention in a child under the age of seventy-two (72) months. This is typically defined as a blood lead level of 20 μg/dL (micrograms per deciliter) of whole blood or above for a single test, or blood levels of 15-19 in two tests taken at least three months apart.

KEY UNITS OF MEASUREMENT

μg (Microgram): A microgram is 1/1000th of a milligram. To put this into perspective, a penny weighs 2 grams. To get a microgram, you would need to divide the penny into 2 million pieces. A microgram is one of those two million pieces.

μg/dL (microgram per deciliter): used to measure the level of lead in children's and worker's blood to establish whether intervention is needed. A deciliter is a little less than a half a cup.

μg/ft^2 (micrograms per square feet): the unit used to express levels of lead in dust samples. All reports should report levels of lead in dust in μg/ft^2.

mg/cm^2 (milligrams per centimeter square): used to report levels of lead in paint thru XRF testing.

PPM (parts per million): Typically used to express the concentrations of lead in soil. Can also be used to express the amount of lead in a surface coating on a mass concentration basis. This measurement can also be shown as: μg/g, mg/kg or mg/l.

PPB (parts per billion): Typically used to express the amount of lead found in drinking water. This measurement is also sometimes expressed as: μg/l.

EPA/HUD PUBLISHED LBP STANDARDS

Dust-thresholds for Lead-Contamination

• Floors	Less than (<) 40 μg/ft^2
• Interior Window Sills	<250 μg/ft^2
• Window Troughs	<400 μg/ft^2

Soil-thresholds for Lead Contamination

• Play areas used by children 6 and under	<400 μg/gram or 400 parts per million (PPM)
• Other areas	<1200 μg/gram or 1200 parts per million (PPM)
• Threshold for abatement	<5000 μg/gram or 5000 parts per million (PPM)

THE FOLLOWING PUBLICATIONS AND RESOURCES CONTAIN ADDITIONAL INFORMATION ON LEAD AND LEAD HAZARDS:

NATIONAL CENTER FOR HEALTHY HOUSING:
www.leadsafehousing.org/

NATIONAL LEAD INFORMATION CENTER &CLEARINGHOUSE:
1-800-424 LEAD, Fax: 301-585-7976
www.epa.gov/lead/nlic.htm

NATION LEAD ABATEMENT AND ASSESSMENT COUNCIL:
1-800-590-6522 Fax: 301-924-0265
www.nllac.org

HUD'S OFFICE OF HEALTH HOMES AND LEAD HAZARD CONTROL:
www.hud.gov/offices/lead
Voice: 1-202-401-0388

THE ALLIANCE TO END CHILDHOOD LEAD POISONING:
www.aeclp.org/

THE ENVIRONMENTAL PROTECTION AGENCY LEAD PROGRAMS:
www.epa.gov/opptintr/lead
Voice: 1-202-260-2090

ANYSTATE DEPARTMENT OF HEALTH AND ENVIRONMENT, LEAD POISONING PREVENTION PROGRAM
www.depthealth..state.as.us/lead/

ADDITIONAL INFORMATION:
Lists of recalled products containing lead: www.safetyalerts.com
The Lead listing – for info on lead-related service providers and EPA accredited laboratories throughout the United States: www.leadlisting.org