APPENDIX "A"

ENVIRONMENTAL REVIEW REPORT

Community Development Block Grant – Disaster Recovery
Owner Occupied Rehabilitation and Rebuilding Program

Applicant # 1024

653 Willow Street
Waterbury, Connecticut

June 23, 2014

Prepared for:

Quisenberry Arcari Architects, LLC
318 Main Street
Farmington, Connecticut

Prepared by:

Stephen Ball
294 White Deer Rocks Road
Woodbury, Connecticut

STATUTORY CHECKLIST [§58.35(a) activities]

for Categorical Exclusions and Environmental Assessments

Note: Review of the items on this checklist is required for both Categorical Exclusions under Sec. 58.35(a) and projects requiring an Environmental Assessment under Sec. 58.36. If no compliance with any of the items is required, a Categorical Exclusion [58.35(a)] may become "exempt" under the provisions of Sec. 58.34 (a) (12). In such cases attach the completed Statutory Checklist to a written determination of the exemption. Projects requiring an Environmental Assessment under Sec. 58.36 cannot be determined to be exempt even if no compliance with Statutory Checklist items is found. Three items listed at Sec. 58.6 are applicable to all projects, including those determined to be exempt.

Project Name and Identification/Location: Pawloski Residence #1024
653 Willow Street Waterbury, Connecicut

Area of Statutory or Regulatory Compliance	Not Applicable to This Project	Consultation Required*	Review Required*	Permits Required*	Determination of consistency Approvals, Permits Obtained*	Conditions and/or Mitigation Actions Required	Provide compliance documentation. Additional material may be attached.
Document Laws and authorities listed at 24 CFR Sec. 58.5							
1. Historic Properties [58.5(a)] [Section 106 of NHPA]	☒	☐	☐	☐	☐	☐	Consulted with State Historic Preservation Office (SHPO) See attached No Effect Letter.
2. Floodplain Management [58.5(b)] [EO 11988] [24 CFR 55]	☒	☐	☐	☐	☐	☐	Flood Insurance Map Community Panel # 09009C0108H 12/17/2010 See attached FIRMLET. Located in Zone X.
3. Wetland Protection [58.5 (b)]	☒	☐	☐	☐	☐	☐	Anticipated impacts on wetlands minimal due to majority of activities limited to pre-storm building footprint. Consulted City of Waterbury Inland Wetlands. See attached Designated Inland Wetlands and Watercourses of Waterbury map.
4. Coastal Zone Management [58.5(c)] [CGS 22a-100(b)]	☒	☐	☐	☐	☐	☐	Project is not within Coastal Zone Boundry. Spoke with George Wisker at DEEP and was total there is no map for Waterbury.
5. Water Quality – Aquifers [58.5(d)] [40 CFR 149] Clean Water Act 1977 Safe Drinking Water Act 1974	☒	☐	☐	☐	☐	☐	Water Quality – N/A Project does not involving on-site water and sewer facilities nor is it located in a sole source aquifer zone.
6. Endangered Species [58.5(e)] [16 U.S.C. 1531 et seq.] [CGS 26-310]	☒	☐	☐	☐	☐	☐	NOT LOCATED AT WATERFRONT PROPERTIES WITH SANDY BEACHES - consult with Department of Interior Fish and Wildlife Database – See attached Department of Interior Fish and Wildlife report.dated May 28, 2014.
7. Wild and Scenic Rivers [58.5 (f)] [16 U.S.C. 1271 et seq.]	☒	☐	☐	☐	☐	☐	Eightmile River is only designated wild & scenic river within program area running through Lyme, Salem and East Haddam, CT (rivers.gov; November 2012) This project is not proximal to any listed Wild and Scenic Rivers.
8. Air Quality [58.5(g)] [42 U.S.C. 7401 et seq.]	☒	☐	☐	☐	☐	☐	Clean Air Act, State Implementation Plan, HUD & EPA Regulations; in general, residential rehabilitation exempted w/no quantifiable increase in air pollution. Project is soley residential rehabilitation with no quanifiable increase in air

Area of Statutory or Regulatory Compliance	Not Applicable to This Project	Consultation Required*	Review Required*	Permits Required*	Determination of consistency Approvals, Permits Obtained*	Conditions and/or Mitigation Actions Required	Provide compliance documentation. Additional material may be attached.
							polution..
9. Farmland Protection [58.5(h)]	☒	☐	☐	☐	☐	☐	Agricultural land use conversion not anticipated. Adverse effects to agricultural resources are not anticipated; clearly defined urban areas . Location not considered protected farmland
Manmade Hazards: 10 A. Thermal Explosive [58.5(i)]	☒	☐	☐	☐	☐	☐	N/A for projects that do not add density
10 B. Noise [58.5(i)]	☒	☐	☐	☐	☐	☐	Not applicable to project – restoration of structure substanitially as it existed prior to Super Storm Sandy.
10 C. Airport Clear Zones [58.5 (i)]	☒	☐	☐	☐	☐	☐	Not applicable - Two (2) FAA designated Commercial Service airports in program area: Tweed New Haven Regional and Groton-New London. This property is not located in an Airport Clear Zone.
10 D. Toxic Sites [58.5 (i)(2)(i)]	☒	☐	☐	☐	☐	☐	The site has no known toxic history based on the attached Toxix Site Certification. The site: 1) is not listed on EPA Superfund National Priorityies or CERCLA list. 2) is not located within 3,000ft of a toxic or solid waste landfill. 3) is not known to have an undergroud storage tank (which is not an undergroud storage fuel tank). 4) Is not known or suspected to be contaminated by radioactive chemicals or radioactive materials.
11. Environmental Justice [58.5(j)]	☒	☐	☐	☐	☐	☐	Executive Order 12898 Program activities do not anticipate high & adverse human health and environmental effects on minority or low-income populations;
Document Laws and authorities listed at Sec. 58.6 and other potential environmental concerns							
12 A. Flood Insurance [58.6(a) & (b)]	☒	☐	☐	☐	☐	☐	Flood Insurance Map Community Panel # 09009C0108H 12/17/2010 See attached FIRMLET Flood insurance not required.
12 B. Coastal Barriers [58.6(c)]	☒	☐	☐	☐	☐	☐	Property is not in a Coastal Management Zone.
12 C. Airport Clear Zone Notification [58.6(d)]	☒	☐	☐	☐	☐	☐	Not applicable - Two (2) FAA designated Commercial Service airports in program area: Tweed New Haven Regional and Groton-New London. The project does not involve the purchase or sale of an existing property in an airport clear zone.

Area of Statutory or Regulatory Compliance	Not Applicable to This Project	Consultation Required*	Review Required*	Permits Required*	Determination of consistency Approvals, Permits Obtained*	Conditions and/or Mitigation Actions Required	Provide compliance documentation. Additional material may be attached.
13. A Solid Waste Disposal [42 U.S.C. S3251 et seq.] and [42 U.S.C. 6901-6987 eq seq.]	☒	☐	☐	☐	☐	☐	Resource Conservation and Recovery Act and Solid Waste Disposal Act; - Residential rehabilitation activities are not expected to affect the capacities of solid waste disposal services.
13 B. Fish and Wildlife [U.S.C. 661-666c]	☒	☐	☐	☐	☐	☐	Fish and Wildlife Coordination Act: Program activities will not result in impounding, diverting, deepening, channelizing or modification of any stream or body of water; not a water control project.
13 C. Lead-Based Paint [24 CFR Part 35] and [40 CFR 745.80 Subpart E]	☐	☒	☒	☐	☐	☐	Lead paint found - See attached Limited Hazardous Materials Inspection Report from Fuss & O'Neill EnviroScience LLC dated April 2014, Revised May 2014 and follow recommendations listed in report. Give tenant Notice about Lead. Compliance will include measures to minimize risk of expsure and when necessary abate any hazardous materials.
13 D. Asbestos	☐	☒	☒	☒	☐	☐	Asbestos found – See attached Limited Hazardous Materials Inspection Report from Fuss & O'Neill EnviroScience LLC dated April 2014, Revised May 2014.and follow recommendations listed in report. Compliance will include measures to minimize risk of expsure and when necessary abate any hazardous materials
13 E. Radon [50.3 (i) 1]	☒	☐	☐	☐	☐	☐	Radon concentration less than 4 picocuries per liter of air and are below regulatory levels. See attached Limited Hazardous Materials Inspection Report from Fuss & O'Neill EnviroScience LLC dated April 2014, Revised May 2014.
13 F. Mold	☐	☒	☒	☐	☐	☐	Mold Found - See attached Limited Hazardous Materials Inspection Report from Fuss & O'Neill EnviroScience LLC dated April 2014, Revised May 2014 and recommendations for remediation.
Other: State or Local 14 A. Flood Management Certification [CGS 25-68]	☒	☐	☐	☐	☐	☐	Based on FEMA Map 09009C0108H Flood Management Certification through General Permit for CDBG-DR program activities with DEEP is not required.
14 B. Structures, Dredging & Fill Act [CGS 22a-359 through 22a-363f]	☒	☐	☐	☐	☐	☐	Not applicable – this project is not waterward of the Coastal Jurisdiction Line.
14 C. Tidal Wetlands Act [CGS 22a-28 through 22a-35]	☒	☐	☐	☐	☐	☐	Not located in Title wetlands
14 D. Local inland wetlands/watercourses [CGS 22a-42]	☒	☐	☐	☐	☐	☐	Not located in wetlands. Consulted City of Waterbury Inland Wetlands. See attached Designated Inland Wetlands and Watercourses of Waterbury map.

Area of Statutory or Regulatory Compliance	Not Applicable to This Project	Consultation Required*	Review Required*	Permits Required*	Determination of consistency Approvals, Permits Obtained*	Conditions and/or Mitigation Actions Required	Provide compliance documentation. Additional material may be attached.
14 E. Various Municipal Zoning Approvals	☒	☐	☐	☐	☐	☐	Only Local Building Permits required.

DETERMINATION:

☐ This project converts to Exempt, per §58.349a)(12), because it does not require any mitigation for compliance with any listed statutes or authorities, nor requires any formal permit or license. Funds may be drawn down for this (now) EXEMPT project; **OR**

☒ This project cannot convert to Exempt because one or more statutes/authories requires consultation or litigation. Complete consultation/mitigation requirements, publish NOI/RROF and obtain Authority to Use Grant Funds (HUD 7015.16) per §58.70 and 58.71 before drawing down funds; **OR**

☐ The unusual circumstances of this project may reasult in a significant environmental impact. This project requires preparation of an Environmental Assessment (EA). Prepare the EA according to 24 CFR Part 58 Subpart E.

Prepared by:

Stephen Ball — 6/11/14 Date

Responsible Entity or designee Signature:

Hermia Delaire, CDBG-DR Program Manager — 6/16/2014 Date

Print

Palace Theater CT Tickets PalaceCT.EventTicketsCenter.com Palace Theatre broadway tickets. Palace Theater in Waterbury Ct.

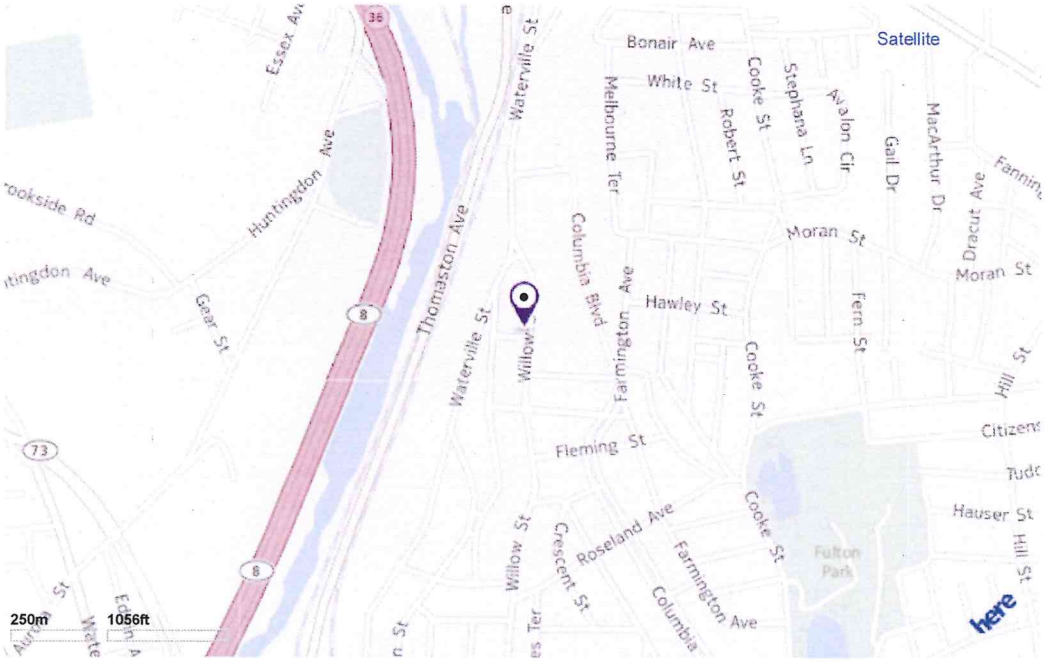
Ad

YAHOO! MAPS

653 Willow St, Waterbury, CT 06710-1215

Enter notes here

255



When using any driving directions or map, it is a good idea to double check and make sure the road still exists, watch out for construction, and follow all traffic safety precautions. This is only to be used as an aid in planning

Department of Economic and Community Development

Connecticut
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March 21, 2014

Mr. Stephen Ball
294 White Deer Roacks Road
Woodbury, CT 06798

Subject: 653 Willow Street
Waterbury, Connecticut

Dear Mr. Ball:

The State Historic Preservation Office (SHPO) has reviewed the information submitted for the above-named property in support of Community Development Block Grant Disaster Recovery (CDBG-DR) funding for repairs required as a result of Hurricane Sandy. These comments are provided in accordance with the Connecticut Environmental Policy Act and Section 106 of the National Historic Preservation Act, as amended.

The property located at 653 Willow Street is a contributing resource to the National Register listed Overlook Historic District. Your work plan dated 2/17/14 includes a new roof and chimney re-pointing. Because these minor changes do not impact the character defining features of the property, the SHPO has determined that the undertaking will have no adverse effects to this historic property.

The SHPO appreciates the opportunity to review and comment upon this project. For further information please contact Catherine Labadia, Environmental Reviewer, at (860) 256-2764 or catherine.labadia@ct.gov.

Sincerely,

Daniel T. Forrest
State Historic Preservation Officer

1024 LR

Department of Economic and Community Development

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May 20, 2014

received
5-21-14 DOH

Hermia M. Delaire
Program Manager
CDBG - Sandy Disaster Recovery Program
Department of Housing
505 Hudson Street
Hartford, CT 06106

Subject: Department of Housing Superstorm Sandy Reviews
653 Willow Street
Waterbury, CT

Dear Ms. Delaire:

The State Historic Preservation Office has reviewed the information submitted for the above-named property, in accordance with the provisions of Section 106 of the National Historic Preservation Act. The property located 653 Willow Street in Waterbury is listed on the National Register of Historic Places as a contributing resource to the Overlook Historic District.

Based on the material provided, the proposed rehabilitation will have no adverse effect upon the state's cultural resources provided the following conditions are met for chimney repointing:

- Remove deteriorated mortar by carefully hand-raking the joints to avoid damaging the masonry
- Duplicate old mortar in strength, composition, color, and texture.
- Duplicate old mortar joints in width and in joint profile.

This office appreciates the opportunity to have reviewed and commented upon the project.

For further information please contact me at (860) 256-2756 or mary.dunne@ct.gov.

Sincerely,

Mary B. Dunne

Mary B. Dunne
Deputy State Historic Preservation Officer

Department of Economic and Community Development

Connecticut
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State Historic Preservation Office

One Constitution Plaza | Hartford, CT 06103 | 860.256.2800 | Cultureandtourism.org

PROJECT REVIEW COVER FORM

1. This information relates to a previously submitted project. ☐ You do not need to complete the rest of the form if you have been previously issued a SHPO Project Number. Please attach information to this form and submit.

SHPO Project Number _____
(Not all previously submitted projects will have project numbers)

Project Address 653 Willow Street, Waterbury, CT
(Street Address and City or Town)

2. This is a new Project. ☐ If you have checked this box, it is necessary to complete ALL entries on this form .

Project Name 653 Willow Street Renovation - Pawloski Residence

Project Location 653 Willow Street
Include street number, street name, and or Route Number. If no street address exists give closest intersection.

City or Town Waterbury
In addition to the village or hamlet name (if appropriate), the municipality must be included here.

County New Haven
If the undertaking includes multiple addresses, please attach a list to this form.

Date of Construction (for existing structures) 1926

PROJECT DESCRIPTION SUMMARY (include full description in attachment):
Install new asphalt shingle roof and repoint chimney

TYPE OF REVIEW REQUESTED

a. Does this undertaking involve funding or permit approval from a State or Federal Agency?

☒ Yes ☐ No

Agency Name/Contact	Type of Permit/Approval	State	Federal
Dept. of Housing	CDBG-DR	☒	☐
		☐	☐
		☐	☐

	Yes	No
b. Have you consulted the SHPO and UCONN Dodd Center files to determine the presence or absence of previously identified cultural resources within or adjacent to the project area?	☐	☒
If yes: Was the project site wholly or partially located within an identified archeologically sensitive area?	☐	☐
Does the project site involve or is it substantially contiguous to a property listed or recommended for listing in the CT State or National Registers of Historic Places?	☐	☐
Does the project involve the rehabilitation, renovation, relocation, demolition or addition to any building or structure that is 50 years old or older?	☐	☐

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PROJECT REVIEW COVER FORM

The Historic Preservation Review Process in Connecticut Cultural Resource Review under the National Historic Preservation Act – Section 106 http://www.achp.gov/106summary.html involves providing technical guidance and professional advice on the potential impact of publicly funded, assisted, licensed or permitted projects on the state's historic, architectural and archaeological resources. This responsibility of the State Historic Preservation Office (SHPO) is discharged in two steps: (1) identification of significant historic, architectural and archaeological resources; and (2) advisory assistance to promote compatibility between new development and preservation of the state's cultural heritage.

Project review is conducted in two stages. First, the SHPO assesses affected properties to determine whether or not they are listed or eligible for listing in the Connecticut State or National Registers of Historic Places. If so, it is deemed "historic" and worthy of protection and the second stage of review is undertaken. The project is reviewed to evaluate its impact on the properties significant materials and character. Where adverse effects are identified, alternatives are explored to avoid, or reduce project impacts; where this is unsuccessful, mitigation measures are developed and formal agreement documents are prepared stipulating these measures. For more information and guidance, please see our website at: http://www.cultureandtourism.org/cct/cwp/view.asp?a=3933&q=293820

ALL PROJECTS SUBMITTED FOR REVIEW MUST INCLUDE THE FOLLOWING MATERIALS*:

☒ **PROJECT DESCRIPTION** Please attach a full description of the work that will be undertaken as a result of this project. Portions of environmental statements or project applications may be included. The project boundary of the project should be clearly defined**

☒ **PROJECT MAP** This should include the precise location of the project – preferably a clear color image showing the nearest streets or roadways as well as all portions of the project. Tax maps, Sanborn maps and USGS quadrangle maps are all acceptable, but Bing and Google Earth are also accepted if the information provided is clear and well labeled. The project boundary should be clearly defined on the map and affected legal parcels should be identified.

☒ **PHOTOGRAPHS** Clear, current images of the property should be submitted. Black and white photocopies will not be accepted. Include images of the areas where the proposed work will take place. May require: exterior elevations, detailed photos of elements to be repaired/replaced (windows, doors, porches, etc.) All photos should be clearly labeled.

For Existing Structures	Yes	N/A	Comments
Property Card	☒	☐	
For New Construction	**Yes**	**N/A**	**Comments**
Project plans or limits of construction (if available)	☐	☐	
If project is located in a Historic District include renderings or elevation drawings of the proposed structure	☐	☐	
Soils Maps http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm	☐	☐	
Historic Maps http://magic.lib.uconn.edu/	☐	☐	
For non-building-related projects (dams, culverts, bridge repair, etc)	**Yes**	**N/S**	**Comments**
Property Card	☐	☐	
Soils Map (see above)	☐	☐	
Historic Maps (see above)	☐	☐	

SHPO USE ONLY	Above	Date	Below	Date
Indicate date of Review and Initials of Reviewer				

PROJECT CONTACT

Name Stephen Ball Title ERR Consultant

Firm/Agency

Address 294 White Deer Rocks Road

City Woodbury State CT Zip 06798

Phone (203) 263-8269 Cell (203) 509-7231 Fax

Email stephenjball@hotmail.com

*Note that he SHPO's ability to complete a timely project review depends largely on the quality of the materials submitted.

** Please be sure to include the project name and location on *each page* of your submission.

Department of Economic and Community Development

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State Historic Preservation Office

One Constitution Plaza | Hartford, CT 06103 | 860.256.2800 | Cultureandtourism.org

PROJECT REVIEW COVER FORM

SHPO USE ONLY

Based on our review of the information provided to the State Historic Preservation Office, it is our opinion that:

☐ No historic properties will be affected by this project. No further review is requested.

☐ This project will cause no adverse effects to the following historic properties. No further review is requested:

☐ This project will cause no adverse effects to the following historic properties, conditional upon the stipulations included in the attached letter:

☐ Additional information is required to complete our review of this project. Please see the attached letter with our requests and recommendations.

☐ This project will adversely affect historic properties as it is currently designed or proposed. Please see the attached letter for further details and guidance.

Daniel T. Forrest
Deputy State Historic Preservation Officer

Date

STEPHEN BALL
294 White Deer Rocks Road
Woodbury, Connecticut 06798

March 17, 2014

Todd Levine
State Historic Preservation Office
One Constitution Plaza, 2nd floor
Hartford, CT 06103

Re: Environmental Review –653 Willow Street, Waterbury, CT

Dear Mr. Levine:

An Environmental Review for renovations due to Super Storm Sandy at 653 Willow Street, Waterbury, CT is required for the use of CDBG-DR funding through the Connecticut Department of Housing. The review requires that State Historic Preservation Office determination regarding historic significance.

I have attached the State Historic Preservation Office review form, scope of proposed work, photographs, map, and assessor's cards.

We do not feel the property has any historic significance and are requesting a finding of "No Effect".

Should you have any questions or require any additional information, feel free to call me at (203) 509-7231.

Thanks,

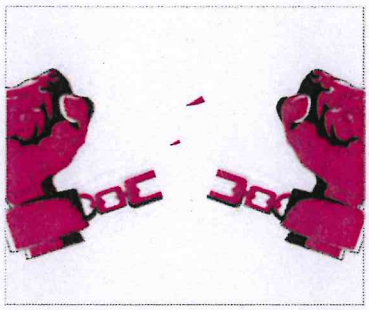
Stephen Ball

Enc.

mapquest

Map of:
653 Willow St
Waterbury, CT 06710-1215

Notes



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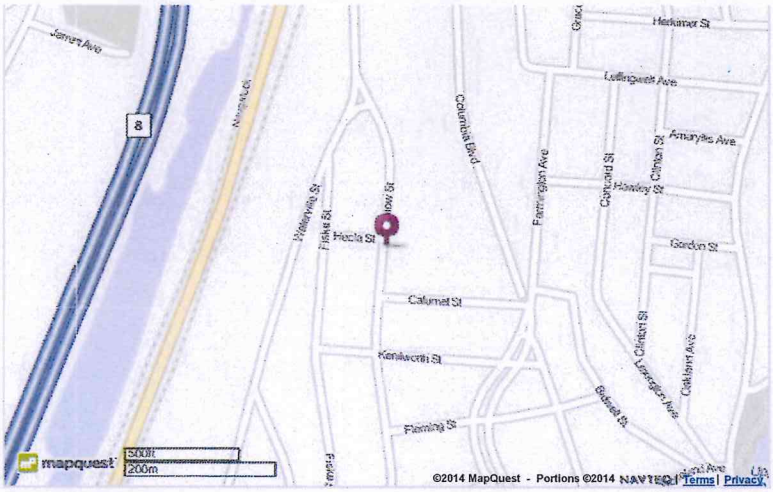

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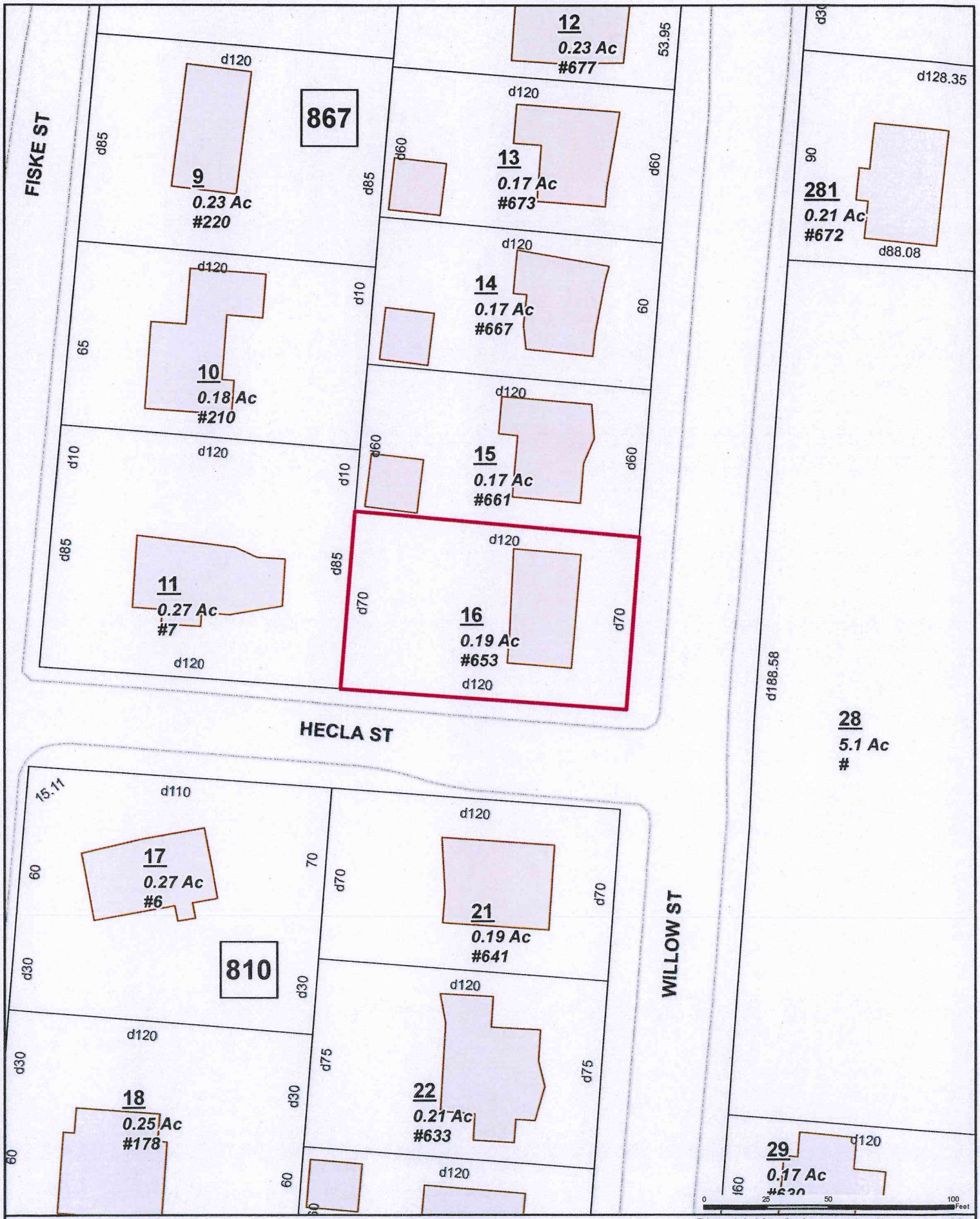
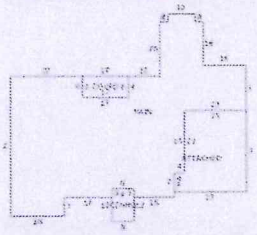


City of Waterbury
Public Works Department

MBL: 0145-0867-0016
ADDRESS: 653 WILLOW ST

This map is for informational purposes only and has not been prepared for, or suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to verify the usability of the information. The City of Waterbury makes no warranties, express or implied, as to the use of the information obtained herein.

Location: 653 WILLOW ST **Owner:** PAWLOSKI BARBARA A



SKETCH COMING SOON

Property Information:

Map Block Lot:	0145-0867-0016	**Acres:**	0.19
Primary Use:	Residential	**Zone:**	RL
Neighborhood:	18500-Overlook	**Vol/Page:**	3768
Mailing Address:	PAWLOSKI BARBARA A 653 WILLOW ST WATERBURY CT 067101215		

Property Values:

	Appraised Value	Assessed Value (70%)
Building	82674	57870
Land	34585	24210
OutBuilding	0	0
Total	117259	82080

Building Information:

Bldg Style:	Colonial	**Living Area:**	1831sq.ft
Construction:	Wood Frame	**Year Built:**	1926
Exterior Wall:	Vinyl Siding	**Stories:**	2
Roof Cover:		**Heating:**	Hot Water
Condition:	Average	**Heat Fuel:**	
Rooms:	7	**Bedrooms:**	3
Full Baths:	1	**Half Baths:**	1

Outbuilding Information:

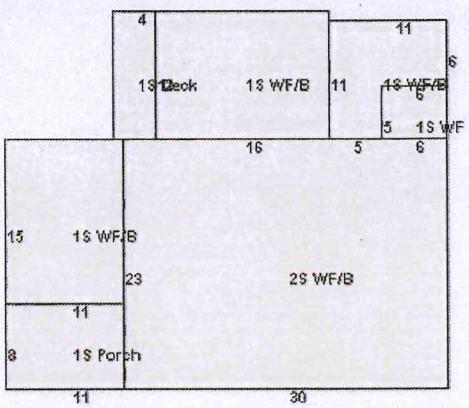
Type	Area (sq.ft)	Year Built	Condition
Wood Deck	48sq.ft	2003	Average
Screen Porch	88sq.ft	1926	Average

Special Features:

Close

City of Waterbury 2012 Revaluation **Last Updated: 02/21/2014**

Internet Map



Summary

Address	653 WILLOW ST	**Map/Block/Lot**	0145-0867-0016
Primary Use	Residential	**Acres**	0.19
Unique ID	014508670016	**Zone**	RL
Volume	3768	**Page**	184

Ownership Information

			Appraised Value	70% Assessment
Current Owner	PAWLOSKI BARBARA A	**Land**	34585	24210
	653 WILLOW ST	**Buildings**	82674	57870
	WATERBURY CT 067101215	**Outbuildings**	0	0
		Total	**117259**	**82080**

Sales History

Previous Owner		**Sale Date**	2/25/1999

Sale Price	107500	**Deed Type**	
Volume/Page	3768 / 184	**Valid Sale**	No

Building #1					
Style	Colonial	Rooms	7	Bsmt Area	946
Building SF	1831	Bedrooms	3	Bsmt Finish	0
Stories	2.00	Baths	1 Full, 1 Half	Bsmt Garage	1 bays
Construction	Wood Frame	Fireplaces	1	Roof	
Overall Condition	Average	Heating	/ Hot Water	Siding	Vinyl Siding ,
Year Built	1926	Cooling %	0	Units	1
Special Features	, ,				
Components	Wood Deck , Screen Porch				

Disclaimer: This information is provided for your use. No claim that the file is complete or that the file is 100% accurate is made. It is a copy of the Property Record File of the town and as such is a constant work in progress. You may also view and copy data in the Town Hall.

Click here to go back.

Quisenberry Arcari
Architects LLC

Repairs & Miscellaneous Upgrades
653 Willow Street Residence
Waterbury, CT

Projected Scope & Magnitude of Cost — February 17, 2014

Scope of Work	*Magnitude of Cost*
Re-roofing	
Remove and replace asphalt shingle roof assemblies (damaged in event), including old wood shake roofing under asphalt shingles. Provide new plywood underlayment, ice & water shield, felts, flashings (copper at chimney), edge metals, venting and minor repairs to existing gutters and downspouts. This is repair and preventative work	*$22,500.00*
Chimney Repointing	
Repoint exposed surfaces of existing chimney, provide new chimney cap	*$3,200.00*
Miscellaneous Corresponding Improvements	
Provide miscellaneous support work required to accommodate the above mentioned improvements	*$2,500.00*

Total Projected Magnitude of Cost — $ 28,200.00

Construction estimates are based on a 2014 construction start.
There is no allowance for cost escalation to future years

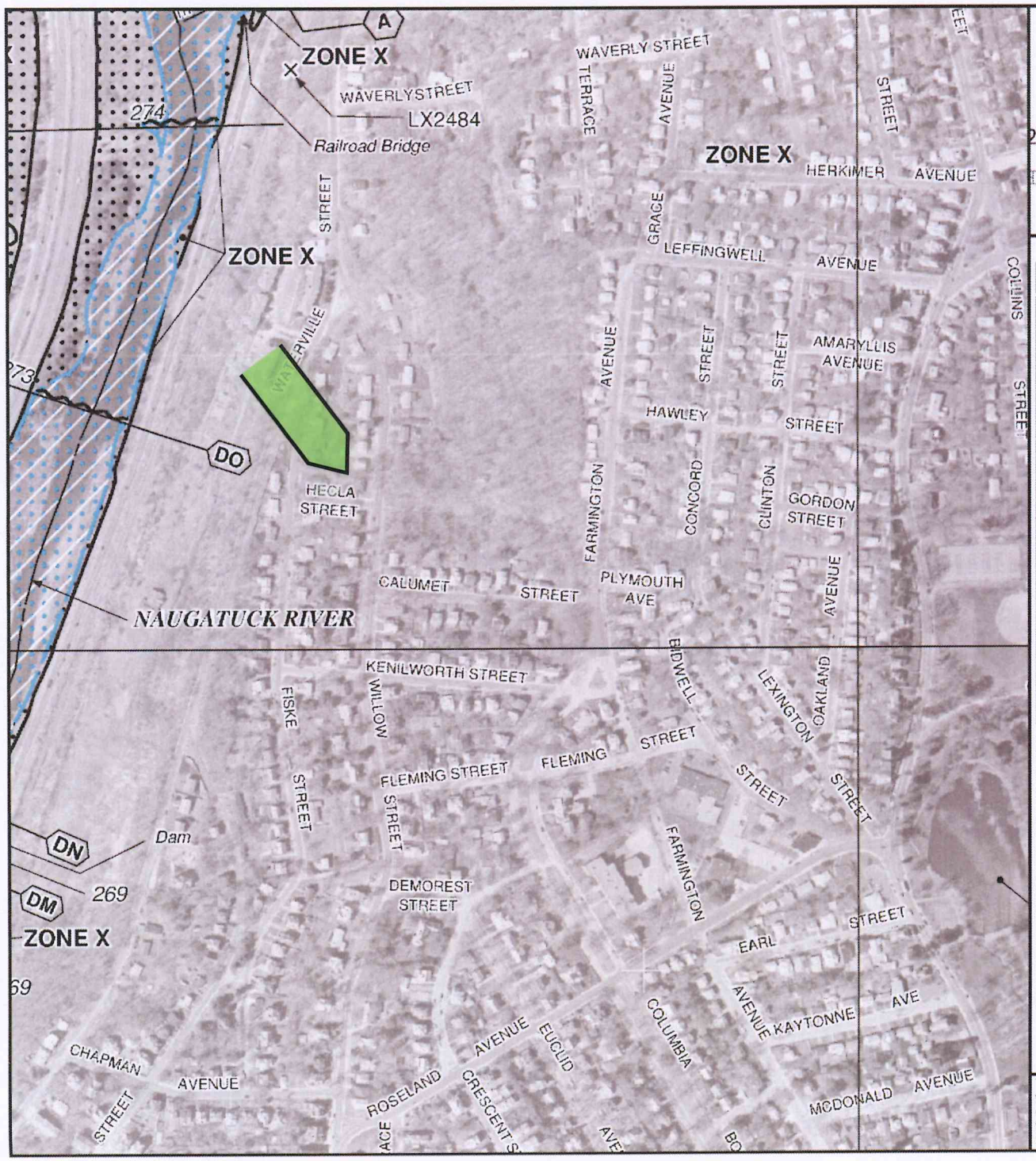
Statement:

Please be advised it is our team's professional assessment that the above mentioned work is required for the execution of repairs corresponding to the storm event and for the prevention of similar damage corresponding to similar future storm conditions.

This assessment was prepared by Mr. Thomas P. Arcari, AIA.
If you have any questions, concerns, or require additional clarification regarding this matter, please do not hesitate to call me or email me at tom@qa-architects.com

318 Main Street
Farmington, CT 06032

860 677.4594
860 677.8534 Fax



MAP SCALE 1" = 500'

250 0 500 1000 FEET

METER

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0108H

FIRM

FLOOD INSURANCE RATE MAP

NEW HAVEN COUNTY, CONNECTICUT

(ALL JURISDICTIONS)

PANEL 108 OF 635

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
WATERBURY, CITY OF	090091	0108	H

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
09009C0108H

EFFECTIVE DATE
DECEMBER 17, 2010

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

JAMES A. SEQUIN, AICP
CITY PLANNER

One Jefferson Square • 5th Floor
Waterbury, CT 06706
Office: (203) 574-6817
Fax: (203) 346-3949
Email: jsequin@waterburyct.org

NEIL M. O'LEARY
MAYOR

CITY PLANNING DEPARTMENT
THE CITY OF WATERBURY
CONNECTICUT

June 6, 2014

Mr. Stephen Ball
294 White Deer Rocks Road
Woodbury, CT 06798

RE: Wetlands Determination for Environmental Review
653 Willow Street, Waterbury, CT

Dear Mr. Ball:

We have received your request as part of an Environmental Review that you are preparing, for a determination from the City of Waterbury Inland Wetlands and Watercourses regulatory body, as to whether or not there are wetlands and or a watercourse on a property located at 653 Willow Street in Waterbury, CT.

There are no mapped wetlands or watercourses per the city of Waterbury map entitled "Designated Inland Wetlands and Watercourses of Waterbury, CT". Please note that a definitive determination regarding the actual boundary of wetland soils would have to be made by a Connecticut certified soils scientist.

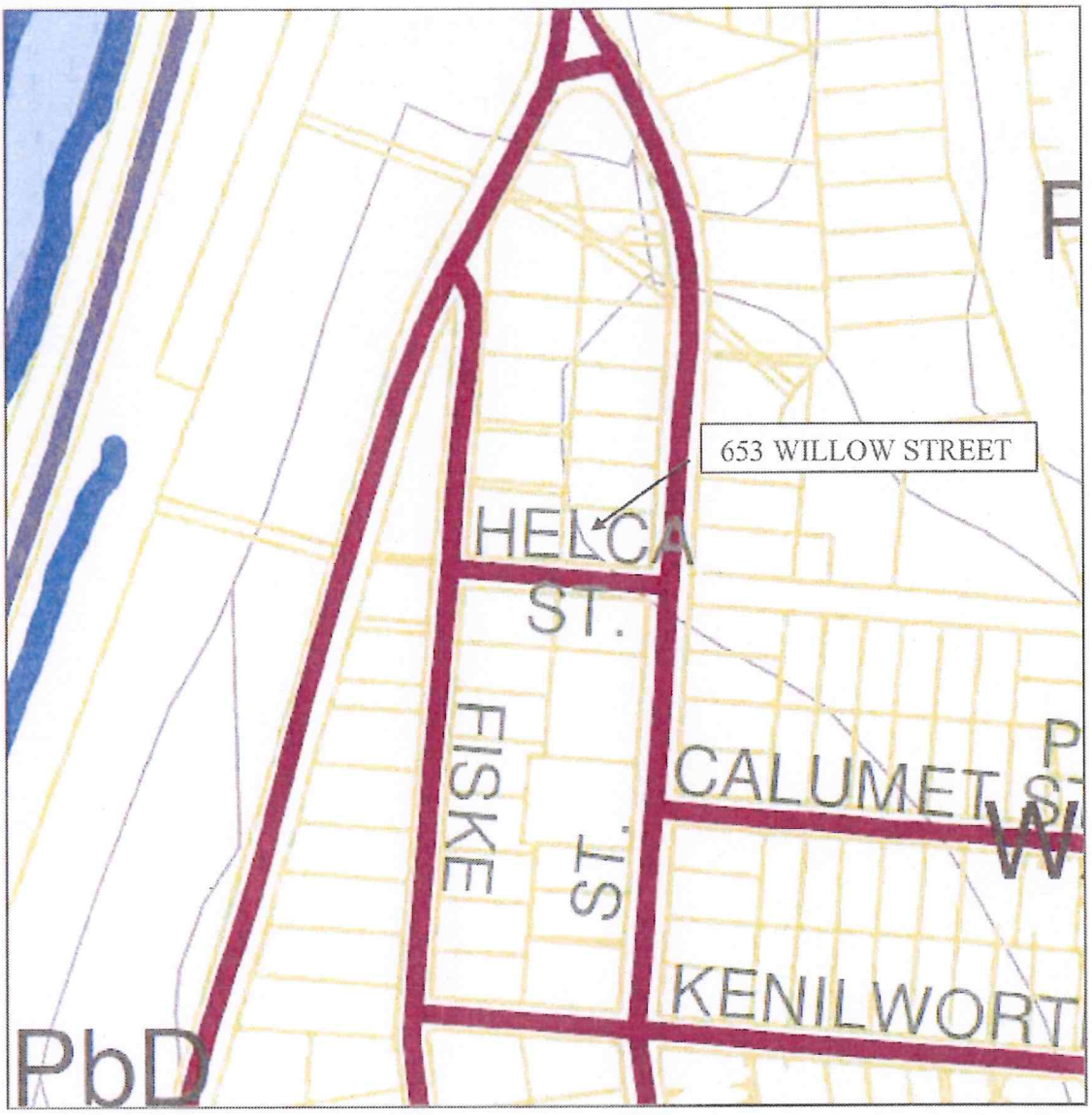
Please do not hesitate to call me at 203-574-6817 or email mbrown@waterburyct.org if you have any questions regarding this review.

Regards,

Margaret Brown

Margaret Brown
Land Use Inspector

Cc: James Sequin, Planning Director



City of Waterbury map entitled "Designated Inland Wetlands and Watercourses of Waterbury, CT

City of Waterbury
Public Works Department

MBL: 0145-0867-0016
ADDRESS: 653 WILLOW ST

This map is for informational purposes only and has not been prepared for, or suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to verify the usability of the information. The City of Waterbury makes no warranties, express or implied, as to the use of the information obtained herein.

N

Stephen Ball
294 White Deer Rocks Road
Woodbury, CT 06798
(203) 509-7231
stephenjball@hotmail.com

May 30, 2014

Margaret Brown
Land Use Inspector
City of Waterbury
One Jefferson Square – 5th Floor
Waterbury, CT 06706

RE: Wetlands Determination for Environmental Reviews

Dear Ms. Brown:

I am preparing Environmental Reviews on four (4)) Waterbury properties that have applied for Super Storm Sandy funding (CDBG-DR). HUD requires written review from local Inland/Wetland regulatory body as part of the Environmental Review. Please provide a written memo or letter on your letterhead letter certifying that there are / are not any mapped wetlands or watercourses on the property, based on the City of Waterbury "Designated Inland Wetlands and Watercourses" map.

The four properties are as follows:

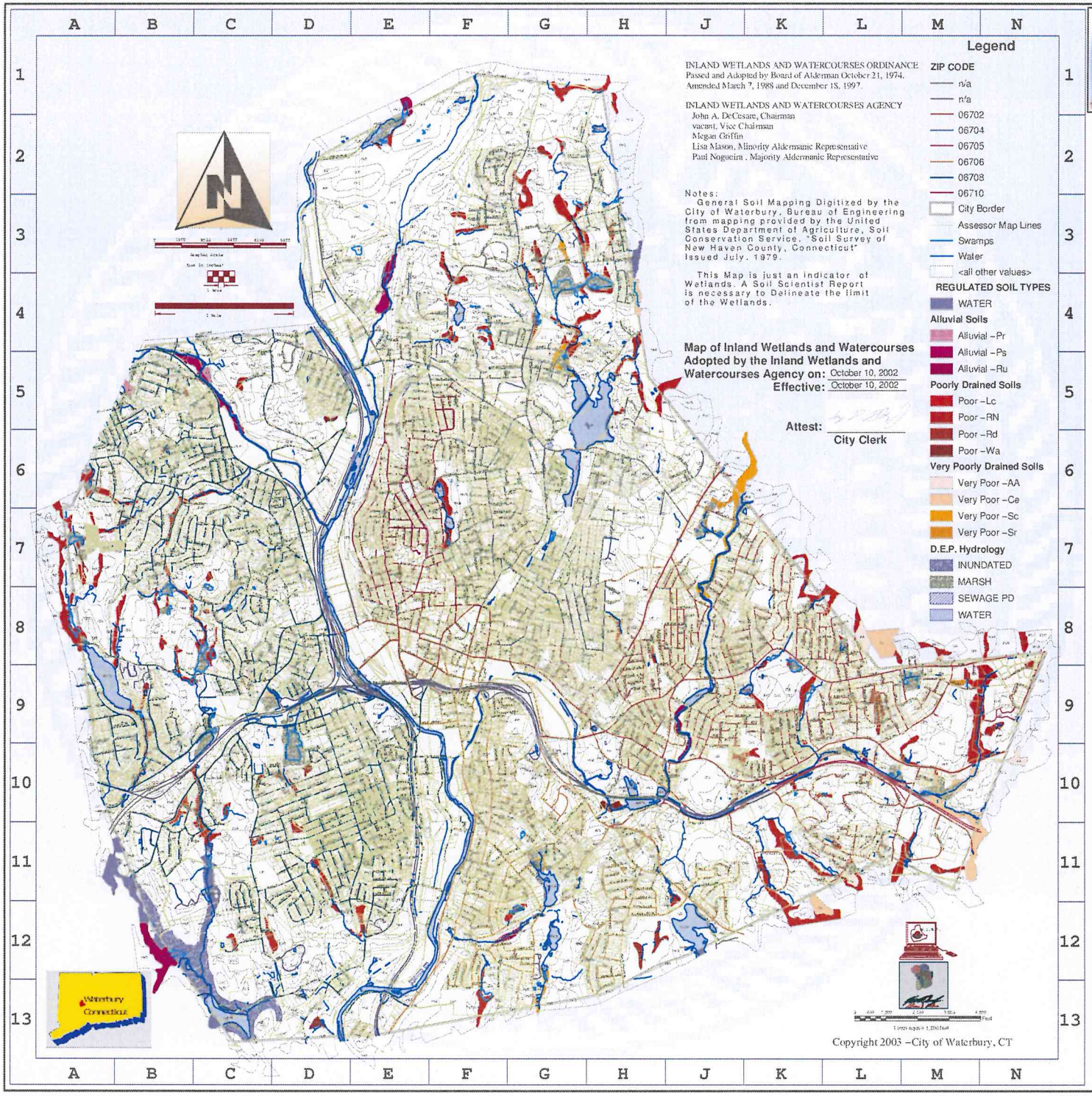
653 Willow Street - roof replacement and Chimney repointing
174 Rodney Street - interior renovations, replace siding, roofing, decking
31 Sheldon Street - structural repairs and interior renovations
92 Rockledge Drive - Repair mold and water damage in basement

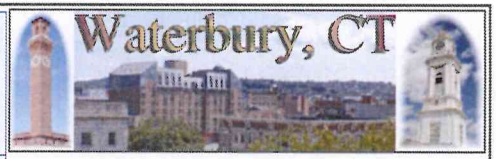
Upon completion, you can e-mail the letter/memo to me or notify me that they are available and I can pick them up.

Should you have any questions regarding this request, feel free to call me at (203) 509-7231.

Thanks,

Stephen Ball





Designated Inland Wetlands and Watercourses of Waterbury, CT

Geographic Information Systems Division

City of Waterbury, Bureau of Engineering 235 Grand St. Waterbury, CT 06702 (203) 574-6851

Created by Neevia docuPrinter trial version

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y Clerk

REGULATED SOIL TYPES

- WATER

Alluvial Soils

- Alluvial –Pr
- Alluvial –Ps
- Alluvial –Ru

Poorly Drained Soils

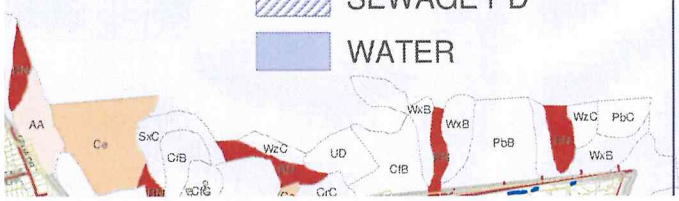
- Poor –Lc
- Poor –RN
- Poor –Rd
- Poor –Wa

Very Poorly Drained Soils

- Very Poor –AA
- Very Poor –Ce
- Very Poor –Sc
- Very Poor –Sr

D.E.P. Hydrology

- INUNDATED
- MARSH
- SEWAGE PD
- WATER



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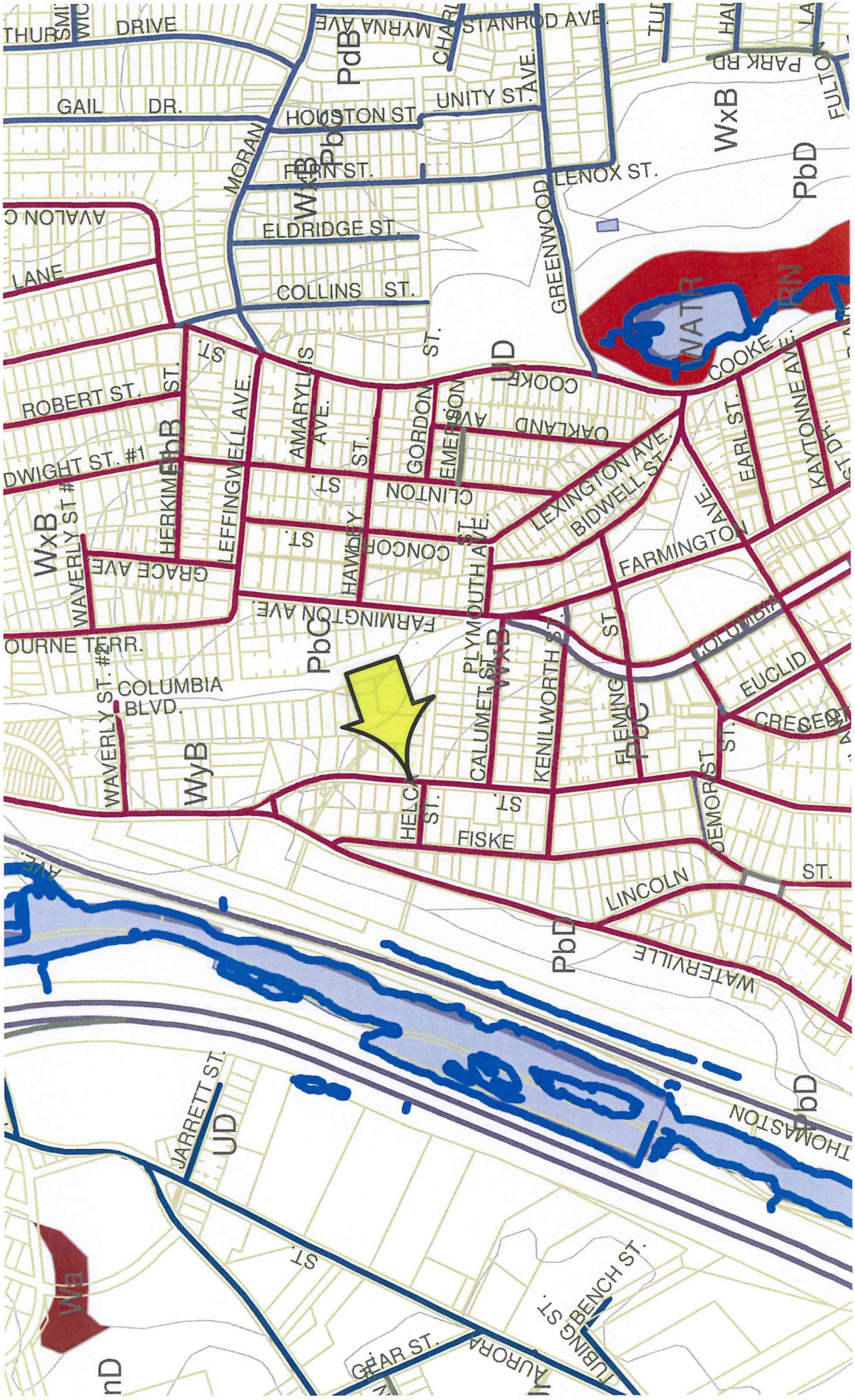
235 Grand St. Waterbury, CT 06702 (

THOMASTON AVE
COLUMBIA BLVD
WATERVILLE ST
FISKE ST
HECLA ST
WILLOW ST
CITY OF WATERBURY RIGHT OF WAY
867
810
808
866
60



THURS
DRIVE
MYRNA AVE
STANROD AVE.
PARK RD
FULTON
GAIL DR.
HOUSTON ST.
UNITY ST.
AVE.
WxB
PbD
MORAN
FERN ST.
LENOX ST.
AVALON C
ELDRIDGE ST.
GREENWOOD
LANE
COLLINS ST.
WATR
RN
COOKE
ROBERT ST.
ST.
AMARYLLIS AVE.
GORDON
EMERSON
OAKLAND
EARL ST.
KAYTONNE AVE.
DWIGHT ST. #1
HERKIMER
LEFFINGWELL AVE.
CLINTON
LEXINGTON AVE.
BIDWELL ST.
WAVERLY ST #
GRACE AVE
HAWLEY
CONCORD
PLYMOUTH AVE.
FARMINGTON
FARMINGTON AVE.
OURNE TERR.
PbC
COLUMBIA
EUCLID
COLUMBIA BLVD.
WAVERLY ST. #2
CALUMET ST.
KENILWORTH ST.
FLEMING
WyB
HELC
FISKE
DEMOR ST
LINCOLN
ST.
WATERVILLE
THOMASTON
JARRETT ST.
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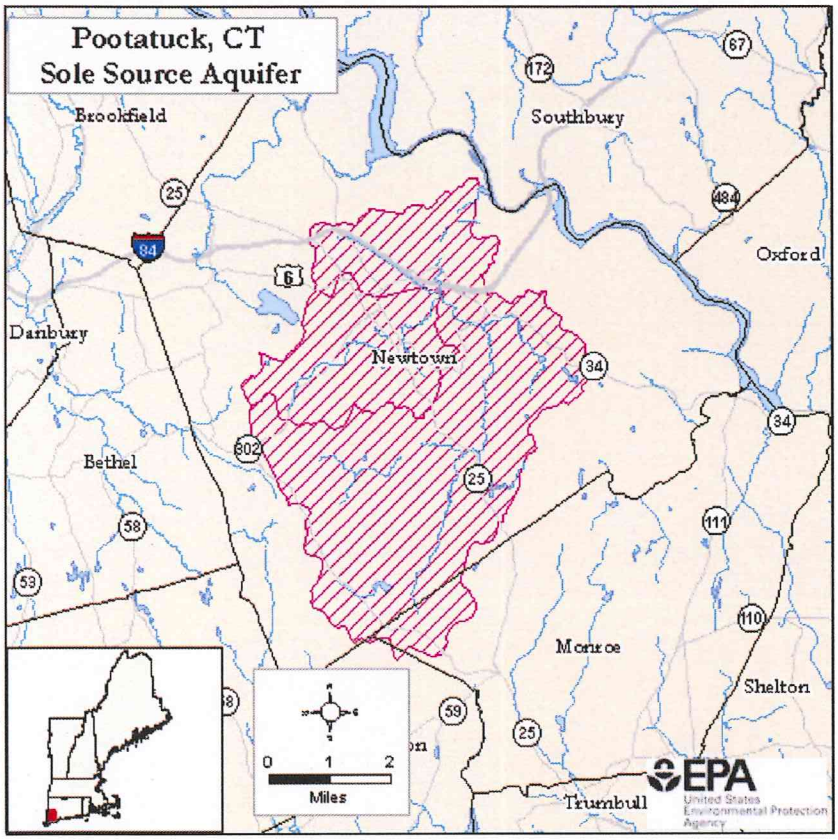
ST.
BENCH ST.
TUBING ST.
GEAR ST.
AURORA

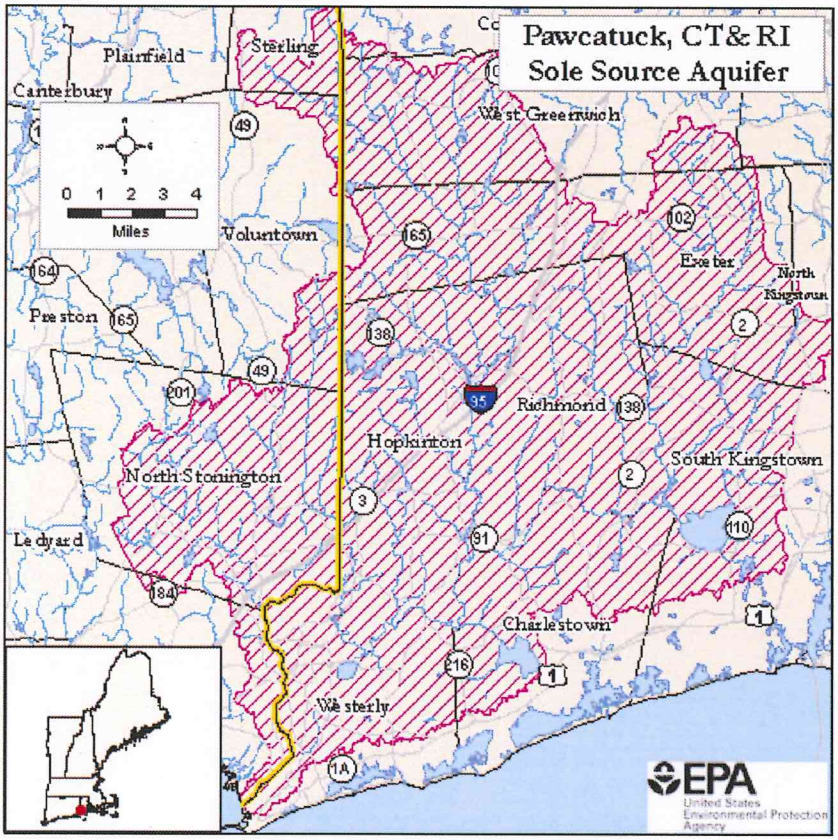
Pootatuck



See Federal Register Notice for further information about the Designated Sole Source Aquifer Area.

Last updated on 5/5/2014

Pawcatuck River



See Federal Register Notice for further information about the Designated Sole Source Aquifer Area.

Last updated on 5/5/2014

Sole Source Aquifer Program

The Safe Drinking Water Act gives EPA the authority to designate aquifers which are the sole or principal drinking water source for an area, and which, if contaminated, would create a significant hazard to public health. After a Sole Source Aquifer is designated, no commitment for federal financial assistance may be provided for any project which the EPA determines may contaminate the aquifer through its recharge area so as to create a significant hazard to public health. An additional benefit of designating an area as a Sole Source Aquifer is the increased public awareness of the nature and value of local ground water resources. Local residents and businesses may be more willing to protect an aquifer through local action if they learn their drinking water originates from a vulnerable underground supply.

The EPA defines a Sole Source Aquifer as one which supplies at least 50% of the drinking water consumed in the area overlying the aquifer. EPA guidelines also require that these areas have no alternative drinking water sources(s) which could physically, legally, and economically supply water to all who depend on the aquifer for drinking water.

As of August 2008, a total of 16 Sole Source Aquifers (one aquifer crosses two states) have been designated by the EPA Region 1, New England Office. There are no potential designations pending at this time:

Massachusetts:

- Broad Brook Basin of the Barnes Aquifer
- Canoe River
- Cape Cod
- Head of the Neponset
- Martha's Vineyard
- Nantucket
- Plymouth/Carver

Connecticut:

- Pawcatuck River
- Pootatuck

Rhode Island:

- Block Island
- Conanicut Island
- Hunt-Annaquatucket-Pettaquamscutt
- Pawcatuck River

Maine:

- Isleboro Island Aquifer System
- Monhegan Island
- North Haven Island
- Vinalhaven Island

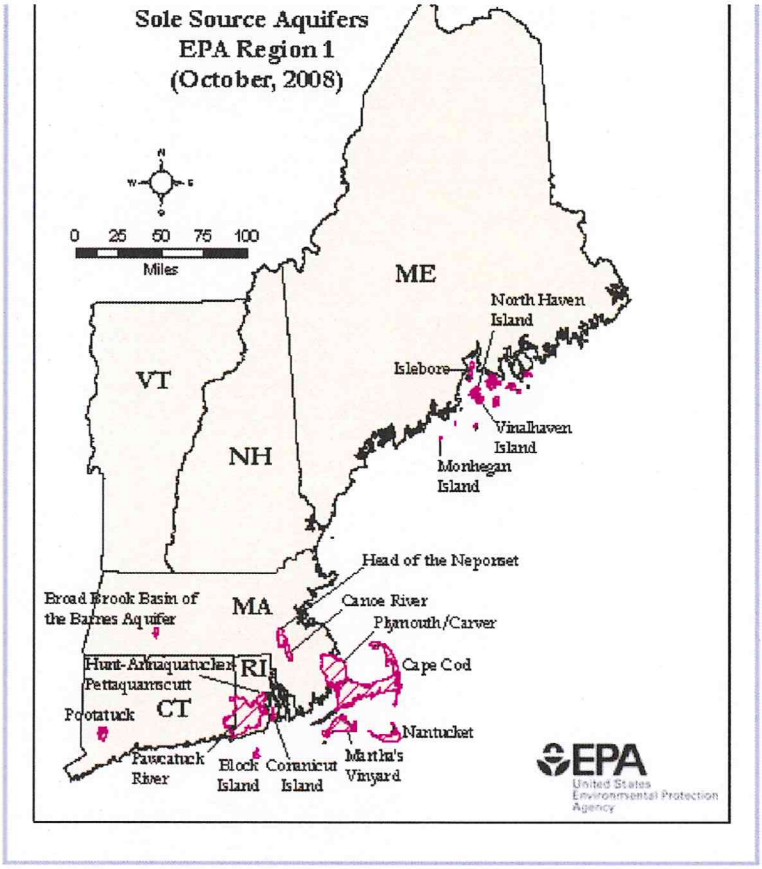
Vermont:

- None designated

New Hampshire:

- None designated

View individual aquifers by clicking the aquifer name.



Any individual, corporation, company, association, partnership, state, municipality or federal agency may apply to have a Sole Source Aquifer designated. In 1987, EPA published the Sole Source Aquifer Designation Petitioner Guidance to assist those interested in preparing and submitting petitions to EPA regional offices. View the petitioners guidance online and learn about national efforts to protect Sole Source Aquifers.

Once designated, proposed federal financially-assisted projects which have the potential to contaminate the aquifer are subject to EPA review. Proposed projects that are funded entirely by state, local, or private concerns are not subject to EPA review through the program. Examples of federally funded projects which have been reviewed by EPA in New England include:

- highway improvements and new road construction
- airport improvements
- transportation stations and maintenance facilities
- new construction of rail lines
- large wastewater treatment facilities
- projects funded through Community Development Block Grants
- large residential developments funded through the Rural Utilities Service
- water system improvements

EPA has developed Memorandum of Understandings with other federal agencies which specify review responsibilities under the Sole Source Aquifer program. Many projects referred to EPA for review meet all federal, state and local ground water protection standards and are approved without any modification. If projects are determined to pose a significant risk of contamination, EPA may make specific recommendations or require modifications as a condition of federal funding. Federal funding can be denied if a project will pose a significant threat of contamination to a Sole Source Aquifer and an applicant is unwilling to make necessary project modifications to reduce its risk of contamination.

Other Information Sources

- Program Factsheet
- Petitioners Guidance
- Map of Sole Source Aquifer Locations in New England with Links to Individual Maps and Their Federal Register Notices
- National Sole Source Aquifer Protection Program-Homepage
- Contact EPA Region 1, NE Office for Further Information
- Source Water Protection - Best Management Practices

Last updated on 5/5/2014

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 COMMERCIAL STREET, SUITE 300
CONCORD, NH 3301
PHONE: (603)223-2541 FAX: (603)223-0104
URL: www.fws.gov/newengland

Consultation Tracking Number: 05E1NE00-2014-SLI-0279 May 28, 2014
Project Name: Superstorm Sandy CDBG-DR

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project.

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having

similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: Superstorm Sandy CDBG-DR

Official Species List

Provided by:

New England Ecological Services Field Office
70 COMMERCIAL STREET, SUITE 300
CONCORD, NH 3301
(603) 223-2541
http://www.fws.gov/newengland

Consultation Tracking Number: 05E1NE00-2014-SLI-0279
Project Type: Federal Grant / Loan Related
Project Description: Install new roof at 653 Willow Street, Waterbury, CT

United States Department of Interior
Fish and Wildlife Service

Project name: Superstorm Sandy CDBG-DR

Project Location Map:

Project Coordinates: MULTIPOLYGON (((-73.04818317 41.57533134, -73.0481444 41.5753287, -73.0481862 41.5753127, -73.04818317 41.57533134)), ((-73.04818317 41.57533134, -73.0486154 41.5753608, -73.0485735 41.5756016, -73.0481444 41.5755695, -73.04818317 41.57533134)))

Project Counties: New Haven, CT

United States Department of Interior
Fish and Wildlife Service

Project name: Superstorm Sandy CDBG-DR

Endangered Species Act Species List

There are a total of 0 threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed on the **Has Critical Habitat** lines may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

There are no listed species identified for the vicinity of your project.

United States Department of Interior
Fish and Wildlife Service

Project name: Superstorm Sandy CDBG-DR

Critical habitats that lie within your project area

There are no critical habitats within your project area.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 COMMERCIAL STREET, SUITE 300
CONCORD, NH 3301
PHONE: (603)223-2541 FAX: (603)223-0104
URL: www.fws.gov/newengland

Consultation Tracking Number: 05E1NE00-2014-SLI-0279 May 28, 2014
Project Name: Superstorm Sandy CDBG-DR

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project.

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A Biological Assessment is required for construction projects (or other undertakings having

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If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

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We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: Superstorm Sandy CDBG-DR

Official Species List

Provided by:

New England Ecological Services Field Office
70 COMMERCIAL STREET, SUITE 300
CONCORD, NH 3301
(603) 223-2541
http://www.fws.gov/newengland

Consultation Tracking Number: 05E1NE00-2014-SLI-0279
Project Type: Federal Grant / Loan Related
Project Description: Install new roof at 653 Willow Street, Waterbury, CT

United States Department of Interior
Fish and Wildlife Service

Project name: Superstorm Sandy CDBG-DR

Project Location Map:

Project Coordinates: MULTIPOLYGON (((-73.04818317 41.57533134, -73.0481444 41.5753287, -73.0481862 41.5753127, -73.04818317 41.57533134)), ((-73.04818317 41.57533134, -73.0486154 41.5753608, -73.0485735 41.5756016, -73.0481444 41.5755695, -73.04818317 41.57533134)))

Project Counties: New Haven, CT

United States Department of Interior
Fish and Wildlife Service

Project name: Superstorm Sandy CDBG-DR

Endangered Species Act Species List

There are a total of 0 threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed on the **Has Critical Habitat** lines may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

There are no listed species identified for the vicinity of your project.

United States Department of Interior
Fish and Wildlife Service

Project name: Superstorm Sandy CDBG-DR

Critical habitats that lie within your project area

There are no critical habitats within your project area.

10 D. Toxic Site Certification

I certify that the property identified as 653 Willow Street Waterbury, Connecticut was checked for inclusion on the attached lists/databases:

DEEP State of Connecticut Superfund Priority List
EPA – Proposed National Priority List dated May 12, 2014
EPA – Final National Priority List dated May 12, 2014
EPA – Deleted National Priority List dated May 12, 2014
EPA – Partial Deleted National Priority List dated May 12, 2014
EPA – Construction Completed at NPL Site
DEEP List of Contaminated or Potentially Contaminated Site dated February 10, 2014.

As on May 14, 2014, 653 Willow Street Waterbury, Connecticut was not listed on any of the above.

Stephen Ball
ERR Reviewer

Limited Hazardous Materials Inspection Report

Storm Sandy Residential Rehabilitation Project
452 Willow Street
Waterbury, Connecticut

Quisenberry Arcari Architects, LLC

Farmington, Connecticut

April 2014
Revised May 2014

FUSS & O'NEILL

Fuss & O'Neill EnviroScience, LLC
56 Quarry Road
Trumbull, CT 06611

Project No. 20140277.A9E

FUSS & O'NEILL
EnviroScience, LLC

April 28, 2014
Revised May 21, 2014

Mr. Thomas Arcari
Principal
Quisenberry Arcari Architects LLC
318 Main Street
Farmington, CT 06032

RE: Revised Limited Hazardous Materials Inspection
Storm Sandy Residential Rehabilitation Project
452 Willow Street, Waterbury, Connecticut
Fuss & O'Neill EnviroScience Project No. 20140277.A9E
Quisenberry Arcari Project No. 1346-08

Dear Ms. Arcari:

Enclosed is the revised report for the limited hazardous materials inspection performed at 452 Willow Street in Waterbury, Connecticut.

The initial inspection was performed on April 1, 2014, by Fuss & O'Neill EnviroScience, LLC licensed inspectors and included an asbestos inspection, testing for lead-based paint, airborne radon assessment, mold assessment, and assessments for PCB-containing ballasts and mercury hazards. On May 8, 2014, EnviroScience performed a lead-based paint risk assessment.

The information summarized in this document is for the above-mentioned materials only. It does not include information on other hazardous materials that may exist in the property (such as underground storage tanks, PCB containing building materials, etc.).

If you have any questions regarding the contents of this report, please do not hesitate to contact us at 203) 374-3748. Thank you for this opportunity to have served your environmental needs.

Sincerely,

Kevin McCarthy
Project Manager

Timothy M. Downey
Sr. Project Manager

Enclosure

56 Quarry Road
Trumbull, CT
06611
t 203.374.3748
800.286.2469
f .203.374.4391

www.fando.com

Connecticut
Massachusetts
Rhode Island
South Carolina

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FUSS & O'NEILL
EnviroScience, LLC

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- 2.4 Conclusion 4

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FUSS & O'NEILL
EnviroScience, LLC

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452 Willow Street, Waterbury, Connecticut

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APPENDIX C	LEAD PAINT TESTING PROCEDURES AND EQUIPMENT
APPENDIX D	LEAD TESTING FIELD DATA SHEETS
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1 Introduction

On April 1, 2014, and May 8, 2014 Fuss & O'Neill EnviroScience, LLC (EnviroScience) Environmental Technicians Mr. Robert Hobbins and Mr. Thomas Cruess performed a limited hazardous materials inspection of the residential structure at 452 Willow Street in Waterbury, Connecticut. Mr. Hobbins and Mr. Cruess are both State of Connecticut-licensed Asbestos Consultants - Inspectors and Certified Lead Paint Inspectors. On May 8, 2014, EnviroScience Environmental Technician Mr. Ulkens Auguste performed a lead paint risk assessment within the residence. Mr. Auguste is a State of Connecticut-Certified Lead Paint Inspector/Risk Assessor. The residential structure was not occupied at the time and date of the inspection. Refer to *Appendix A* for EnviroScience state licenses and certifications.

This inspection was performed in response to the planned renovations to damaged or impacted areas of the building caused by Superstorm Sandy as identified in the *Residence Rehabilitation Letter* dated March 12, 2014, provided by Quisenberry Arcari Architects. The limited inspection consisted of the following:

- A inspection for asbestos-containing materials (ACM) associated with the scheduled roof replacement;
- Testing and risk assessment of painted surfaces coated with lead-based paint (LBP);
- An evaluation of fluorescent light fixtures for polychlorinated biphenyls (PCB)-containing ballasts;
- An inventory of light tubes and devices for mercury;
- Airborne radon gas assessment;
- A mold assessment;

2 Asbestos Inspection

A Property Owner must ensure that performance of a thorough inspection for asbestos-containing materials (ACM), prior to possible disturbance of materials containing asbestos during renovation or demolition, is conducted. This is a requirement of the United States Environmental Protection Agency (EPA) National Emission Standards for Hazardous Air Pollutants (NESHAP) regulation 40 CFR Part 61, Sub-Part M.

This includes Friable, Non-Friable Category I, and Non-Friable Category II ACM.

- A Friable Material is defined as material that contains greater than one percent (>1%) asbestos, that when dry **can** be crumbled, pulverized, or reduced to powder by hand pressure.
- A Category I Non-Friable Material refers to material that contains greater than one percent (>1%) asbestos (e.g. packings, gaskets, resilient floor coverings, asphalt roofing products, etc.) that when dry **cannot** be crumbled, pulverized, or reduced to powder by hand pressure.
- A Category II Non-Friable Material refers to any non-friable material (excluding Category I materials) that contains greater than one percent (>1%) asbestos that when dry **cannot** be crumbled, pulverized, or reduced to powder by hand pressure.

During this inspection, suspect ACM were separated into three EPA categories. These categories are: thermal system insulation (TSI), surfacing ACM, and miscellaneous ACM. TSI includes all materials used to prevent heat loss or gain or water condensation on mechanical systems. Examples of TSI are pipe insulation, boiler insulation, duct insulation, and mudded insulation on pipe fittings. Surfacing ACM includes all ACM that is sprayed, troweled, or otherwise applied to an existing surface. Surfacing ACM is commonly used for fireproofing, decorative, and acoustical applications. Miscellaneous materials include all ACM not listed in thermal or surfacing, such as linoleum, vinyl asbestos flooring, and ceiling tiles. Samples are recommended to be collected in a manner sufficient to determine asbestos content and include homogenous building materials. The EPA NESHAP regulation does not specifically identify a minimum number of samples to be collected, but recommends the use of sampling protocols included in EPA Title 40 CFR, Part 763, Subpart E, Asbestos Containing Materials in Schools.

2.1 Methodology

Samples of suspect ACM were collected in accordance with EPA recommendations and Asbestos Hazard Emergency Response Act (AHERA) protocols. The protocols included the following:

1. Surfacing Materials (SURF) (e.g., plaster, spray-on fireproofing, etc.) were collected in a randomly distributed manner representing each homogenous area based on the overall quantity represented by the sampling as follows:
   a. Three samples collected from each homogenous area that is less than or equal to (≤) 1,000 square feet.
   b. Five samples collected from each homogenous area that is greater than (>) 1,000 square feet, but less than or equal to 5,000 square feet.
   c. Seven samples collected from each homogenous area that is greater than (>) 5,000 square feet.

2. Thermal System Insulation (TSI) (e.g., pipe insulation, tank insulation, etc.) was collected in a randomly distributed manner representing each homogenous area. Three bulk samples were collected as representative of each homogeneous material type, and sent to laboratory for asbestos analysis. Also, a minimum of one sample of any patching material (less than 6 linear of square feet) applied to TSI was collected.

3. Miscellaneous Materials (MISC) (e.g., floor tile, gaskets, construction mastics, etc.) had a minimum of two samples collected as representative of each homogenous material type. Sampling was conducted in a manner sufficient to determine asbestos content of the homogenous material as determined by the Asbestos Inspector. If materials identified were of (significant) minimal quantity, only a single sample was collected.

The Asbestos Consultants – Inspectors collected samples and prepared proper chain of custody forms for transmission of samples to an accredited laboratory for analysis by Polarized Light Microscopy (PLM). The sampling locations, material type, quantity, sample identification, and asbestos content are identified by bulk sample analysis in Tables 1 and 2 of the "Results" section. Any materials on the site not listed in the following tables should be considered suspect ACM until sample results indicate otherwise. Refer to *Appendix B* for PLM analytical results for asbestos bulk samples and chain of custody forms.

2.2 Results

Utilizing the EPA protocol and criteria, the following materials were determined to be ACM:

Table 1
Asbestos-Containing Materials

Location	Material Type	Asbestos Content	Estimated Quantity	Sample No.
Throughout Residence *(Only Visible in Basement)*	Pipe Insulation and Mudded Insulation on Pipe Fittings *(Material May Exist in Walls/Chases)*	15% Chrysotile	Accessible - 140 LF Inaccessible – 250 LF	0401BH01A
Exterior Roof at Chimney	Flashing and Shingles	Assumed *Material (Assumed ACM - Inaccessible)*	20 SF *(Estimated to be Disturbed During Renovations)*	N/A

Note: **LF**=Linear Feet

Utilizing the EPA protocol and criteria, the following materials were determined to be **non-ACM**:

Table 2
Non-Asbestos-Containing Materials

Location	Material Type	Sample No.
Throughout	Top & Base Coat Plasters	0401BH03A-G, 04A-G
Basement	Ceiling Wallboard	0401BH05A-B
3rd Floor	Wall Fiberboard	0401BH06A-B
Throughout	Sheetrock & Taping/Joint Compound	0401BH07A-B, 08A-B, 09
Back Porch at Kitchen	Ceramic Floor Tile, Grout & Thinset	0401BH10A-B, 11A-B, 12A-B
1st Floor	Red Vapor Barrier under Hardwood Flooring	0401BH13A-B
Basement	Chimney Brick & Grout	0401BH14A-B, 15A-B
	Fieldstone Foundation Wall & Mortar	0401BH16A-B, 17A-B
	Chimney Flue Cement	0401BH18A-B
	Concrete on Old Furnace Oil Line	0401BH19A-B
	Concrete Floor	0401BH20A-B

Location	Material Type	Sample No.
Exterior Window Systems	Exterior Window Glazing Compound	0508BH01A-C

2.3 Discussion

Sample analytical results are reported in percentages of asbestos and non-asbestos components. The EPA defines any material that contains more than one percent (1%) asbestos utilizing PLM as an ACBM. Materials that are identified as "none detected" are specified as not containing asbestos. It is usually recommended that materials identified as containing less than one percent (< 1%) asbestos be further analyzed using the EPA point count method or by Transmission Electron Microscopy (TEM).

2.4 Conclusion

Interior ACM identified in *Section 2.1 - Table 1* must be removed by a State of Connecticut-licensed Asbestos Abatement Contractor prior to building renovations that will disturb the materials. This is a State of Connecticut Department of Public Health (CTDPH) Standards for Asbestos Abatement requirement.

The non-friable roofing materials identified in *Section 2.1 - Table 1* have been de-regulated by CTDPH. The identified non-friable roofing materials can be removed either by a CTDPH-licensed Asbestos Abatement Contractor, or by a roofing contractor provided that they adhere to all Occupational Safety and Health Administration (OSHA) training requirements and EPA NESHAP regulations. All asbestos waste must be properly sealed (leak/airtight containers) and disposed in a landfill approved to accept asbestos waste. A licensed Asbestos Abatement Contractor is only required should the ACM be made friable and become a regulated asbestos-containing material (RACM) by work activities. All applicable CTDPH regulations shall apply if the material becomes RACM.

Note that the boiler unit was previously removed prior to the time and date of this inspection.

<u>Any suspect material encountered during renovation/demolition that is not identified in this report as being non-ACM, should be assumed to be ACM unless sample results indicate otherwise.</u>

3 Lead-Based Paint Testing

On April 1, 2014, comprehensive testing for LBP was performed within the residential structure located at 452 Willow Street in Waterbury, Connecticut, by EnviroScience's Environmental Technicians Robert Hobbins and Thomas Cruess on April 1, 2014. The purpose of the testing was for compliance with EPA's Renovation, Repair and Painting Rule (RRP) (EPA Title 40 CFR, Parts 745.80 through 92) and the United States Department of Housing and Urban Development (HUD) Lead-Safe Housing Rule (Title 24 CFR, Part 35. Subparts B-R). On May 12, 2014, EnviroScience's Environmental Technician Ulkens August performed a risk assessment for the purpose of HUD Lead-Safe Housing Rule (24 CFR 35, Sub-part B-R) compliance.

A direct reading X-ray fluorescence (XRF) analyzer was used to perform the testing. The testing was conducted in accordance with the protocol outlined in the attached document: Testing Procedures and Equipment (refer to *Appendix C*).

For the purpose of this testing, various interior and exterior components representing the initial painting history of the building and any building-wide repainting by the owners/managers of the building components were tested. Individual repainting efforts are not discoverable in such a limited testing program. The purpose of this testing was to identify trends in the painting history of the building to determine if Toxicity Characteristic Leaching Procedure (TCLP) analysis is required. Additionally, representative lead in dust wipe samples, lead in soil samples, and lead in drinking water samples were collected for the risk assessment portion of the project.

The structure is constructed with a wood siding exterior with metal, wood, and vinyl window and door systems. The interior walls are constructed of plaster and sheetrock; the floors are concrete..

3.1 XRF Testing Results

The testing indicated consistent painting trends throughout the building interiors and exteriors. No painted building components were determined to contain toxic levels of lead (greater than 1.0 milligrams of lead per square centimeter [mg/cm^2] of paint), with the exception of the following:

Table 3
Lead Painted Building Components

Item	Location	Reading (mg/cm^2)	Defective?
Interior Sheetrock Wall	Basement	9.1	Yes
Wood Cabinet Doors		2.2–7.8	Yes
Door and Door Trim		8.6–>9.9	Yes
Wall (D side)	3rd Floor Corridor	>9.9	No
Closet Shelf Support		>9.9	No
Drawers		>9.9	No
Walls and Ceiling	3rd Floor Bathroom	>9.9	No
Wall Trim		4.2	No
Ceiling trim		4.6	No
Door System		2.8–4.9	No
Window System		1.1–5.6	No
Radiator		2.5	No

Item	Location	Reading (mg/cm²)	Defective?
Tub		>9.9	No
Stairwell Tread, Stringer and Riser	3rd Floor Stairwell	1.3–3.6	No
Interior Wood Wainscot Walls and Ceiling	2nd Floor Rear Room (Room 5)	>9.9	No Yes – B Wall
Door System	2nd Floor Bath	7.6–9.9	No
Window System		>9.9	No
Baseboard	2nd Floor Corridor	>9.9	Yes
Closet Trim	1st Floor (Front Door)	6.7	No
Walls	1st Floor Room 7	>9.9	No
Radiator		6.7	Yes
Walls and Ceiling	1st Floor Back Porch	>9.9	No
Interior Wood Doors	1st & 2nd Floors	7.6–>9.9	No
Interior Window Components	Exterior Window Systems	3.8–>9.9	No Yes - Well
Exterior Window Systems	Exterior	>9.9	Yes
Exterior Door Systems	Exterior	>9.9	Yes
Soffit	Exterior (C Side)	>9.9	No
Exterior Porch Components	Front Porch (Willow Street)	6.6–>9.9	Yes

Field testing sheets are provided as *Appendix D* in this report.

3.2 Dust Wipe Samples

Representative dust wipe samples were collected inside the residence located at 452 Willow Street to evaluate whether a lead dust hazard existed. The sample numbers, locations, and results are as follows:

Table 4
Lead Dust Wipe Sample Results

Sample No.	Location	Results*
050814UA-33	3rd Floor Room 1–Floor	1,400 µg/ft²
050814UA-34	3rd Floor Room 1–Window Sill	7,500 µg/ft²
050214UA-35	2nd Floor Bedroom (Rm 2) – Floor	700 µg/ft²

Sample No.	Location	Results*
050814UA-36	2nd Floor Bedroom (Rm 2) – Window Sill	4,100 μg/ft²
050814UA-37	1st Floor Back Porch (Room 4) – Floor	290 μg/ft²
050814UA-38	1st Floor Back Porch (Room 4) – Window Sill	<40 μg/ft²
050814UA-39	1st Floor Back Porch (Room 4) – Window Sill *Duplicate sample*	280 μg/ft²
050814UA-40	1st Floor Room 6 (Room 3) – Floor	440 μg/ft²
050814UA-41	1st Floor Room 6 (Room 3) – Window Sill	1,100 μg/ft²
050814UA-42	Field Blank	<10 μg/ft²
050814UA-43	Field Blank	<10 μg/ft²

* μg/ft² = micrograms per square foot

Dust wipe samples were collected from window sill and floor locations as delineated on our sample log. The dust wipe sampling was conducted in accordance with the protocol outlined in the document "Lead Testing Procedures and Equipment" (*Appendix C*). Sample results were compared to Connecticut standards for dust as follows:

- 40 μg/ft² - for floors
- 250 μg/ft² - for window sills

The analytical sample results and their locations are provided as *Appendix E* in this report.

3.3 Soil Samples

Representative composite soil samples were collected from bare soil conditions along the exterior drip line of the residence located at 452 Willow Street to evaluate whether a lead in soil hazard exists. The sample numbers, locations, and results are as follows:

Table 5
Soil Sample Results

Sample No.	Location	Results*
050814UA-44	B-Side Composite, Drip Line	1,800 mg/kg
050814UA-44	D-Side Composite, Drip Line	940 mg/kg

* mg/kg = milligrams per kilogram

The soil sampling was conducted in accordance with the protocol outlined in the document "Lead Testing Procedures and Equipment" (*Appendix C*).

The analytical sample results and their locations are provided as *Appendix F* in this report.

3.4 Conclusion

The following building components were determined to be coated with toxic levels of lead in paint:

- Basement–interior sheetrock wall, cabinet doors, and door and door trim;
- 3rd floor corridor– D Wall, closet shelf support and drawers;
- 3rd floor bath–walls, ceiling, wall and ceiling trim, door system, window system, radiator, and tub;
- 3rd floor stairwell system;
- 2nd floor Room 5–walls and ceilings;
- 2nd floor bath–door and window systems;
- 2nd floor corridor–door casing, door jamb, and baseboard;
- 1st floor closet trim;
- 1st floor Room 7–walls and radiator;
- 1st floor back porch–walls and ceiling;
- 1st and 2nd floors–interior window and door systems;
- Exterior front porch components;
- Exterior soffit (side C); and
- Exterior window and door systems.

The following interior defective LBP identified at the Site must be completely abated of lead paint:

- Basement–interior sheetrock wall, cabinet doors, and door and door trim;
- 2nd floor Room 5–walls and ceilings;
- 2nd floor corridor–baseboard; and
- Window wells.

Exterior defective LBP identified on the exterior window and door systems and exterior front porch components can be addressed with interim controls that consist of scrapping the defective LBP and encapsulating the painted surface with a CTDPH-approved encapsulant.

If these components are to be demolished during renovations, we recommend a TCLP sample of the anticipated waste stream be collected and analyzed to determine waste management options.

Dust wipe sample results were above the CTDPH standard on floors and window sill surfaces; a lead dust hazard does exist in the areas tested. Lead dust located on the floors and window sill surfaces throughout the residence must be cleaned to below the Connecticut standard of 40 $\mu g/ft^2$.

Soil sample results were above the CTDPH standard for lead in soil of 400 mg/kg; a lead in soil hazard does exist in the areas tested. Impermanent surface coverings may be used to treat lead-contaminated soil if applied. Examples of acceptable impermanent coverings include: gravel, bark, sod, and artificial turf.

In addition, the interior domestic water pipes were disconnected at the time and date of the inspection; therefore, a lead in drinking water sample could not be collected and a lead hazard was not assessed.

The Contractor shall be aware that OSHA has not established a level of lead in a material below which Title 29 CFR, Part 1926.62 ("Lead in Construction") does not apply. The Contractor shall comply with employee exposure assessment criteria, interim worker protection, and other requirements of the regulation as necessary to protect workers and building occupants from lead exposure.

To comply with EPA's RRP, a comprehensive lead Inspection of the entire structure or targeted areas scheduled for renovation is necessary to determine if the RRP rule is applicable. A comprehensive lead inspection includes testing representative coated building components in each room or room equivalent for LBP. All similar building components to the surface tested on a per room basis shall be considered as having the same paint (e.g., if more than one window or door in a room typically only one is tested but remaining must be assumed to be the same as the one tested). **This inspection was performed as a comprehensive inspection of all representative surfaces within the residence that are scheduled to be disturbed and can be utilized to determine applicability requirements for the RRP rule on surfaces tested.**

Those surfaces which contain lead paint are subject to RRP work practice and training requirements if more than the de-minimus amounts are disturbed in renovation or for projects involving window replacement. Those surfaces which do not contain lead paint are not subject to the RRP requirements. If a specific component or surface is not identified as having been tested, it should be presumed to be coated with LBP until tested and proven otherwise. Contractor's should be aware that the threshold limit of 1.0 mg/cm^2 for purposes of RRP requirements is not recognized by OSHA, and employee exposures are still subject to the Lead in Construction regulation, regardless of paint testing results.

4 Assessment of PCB-Containing Fluorescent Ballasts

Fluorescent light ballasts manufactured prior to 1979 may contain capacitors that contain PCBs. Ballasts installed as late as 1985 may contain PCB capacitors. Fluorescent light ballasts that are not labeled as "No-PCBs" must be assumed to contain PCBs, unless proven otherwise by quantitative analytical testing. Capacitors in fluorescent light ballasts labeled as non-PCB containing may contain diethylhexl phthalate (DEHP). DEHP was the primary substitute to replace PCBs for small capacitors in fluorescent lighting ballasts in use until 1991. DEHP is a toxic substance, a suspected carcinogen, and is listed under the EPA Resource Conservation and Recovery Act (RCRA) and the Superfund law as a hazardous waste. Therefore, Superfund liability exists for land filling both PCB and DEHP-containing light ballasts. These listed materials are considered hazardous waste under RCRA and require special handling and disposal requirements.

On April 1, 2014, EnviroScience representative Robert Hobbins performed a visual inspection of representative fluorescent light fixtures to identify possible PCB-containing ballasts. The inspection involved visually inspecting labels on representative light ballasts to identify dates of manufacture and labels indicating "No PCB's". Ballasts manufactured after 1991 were not listed as a PCB or DEHP containing ballast and not quantified for disposal. Ballasts without a label indicating "No PCB's" are presumed to be PCB waste, and must be segregated for proper removal, packaging, transport and disposal as PCB waste. Ballasts with date labels indicating manufacture prior to 1991 that indicate "No PCB's" are presumed to contain DEHP, and must be segregated for proper removal, packaging, transport, and

disposal as non-PCB hazardous waste. The disposal requirements are slightly varied and costs are slightly less for DEHP than PCB-containing light ballasts.

4.1 Results

Several of the fixtures that were examined were not labeled with either the manufacturer's information or a "No PCB's" label. However during the inspection some types of ballasts were labeled with a "No PCB's" label. Therefore there is a mixture of assumed PCB and non-PCB ballasts within the areas inspected in the building.

It is estimated that a total of approximately 20 light ballasts exist within the structure that were not labeled with either the manufacturer's information, or a "No PCB's" label.

4.2 Conclusion

If the renovation activities will disturb the materials, prior to disturbance, the light ballasts not labeled "No PCBs" should properly recycled as PCBs, and the remaining labeled "No PCBs" ballasts properly recycled as assumed DEHP-containing items.

5 Assessment of Mercury-Containing Devices

Fluorescent lamps/tubes are presumed to contain mercury vapor, which is a hazardous substance to both human health and the environment. Thermostatic controls and electrical switch gear may contain a vial or bulb of mercury associated with the control. Mercury-containing equipment is regulated for proper disposal by EPA RCRA hazardous waste regulations. Mercury lamps according to the EPA are considered a universal waste, requiring all fluorescent lamps to be recycled or disposed as hazardous waste.

On April 1, 2014, EnviroScience's representative Robert Hobbins performed a visual inspection and inventory of mercury lamps/tubes, thermostats, and mercury switches. These fixtures were inventoried in-place.

5.1 Results

It is estimated that approximately 40 fluorescent light tubes and five mercury thermostats exist within the structure. No other switches or gauges were observed within the structure.

5.2 Conclusion

If renovation activities will disturb the materials, prior to disturbance, the light tubes should be properly recycled and the thermostats properly disposed.

6 Mold Visual Assessment

On April 1, 2014, EnviroScience representative Robert Hobbins performed a visual assessment for the presence of suspect mold and water intrusion.

Bulk samples of visible suspect mold growth were collected for analysis via direct microscopic analysis. Direct analysis identifies all types of mold spores, but does not differentiate between viable and non-viable mold spores. Non-viable mold spores can be of interest with respect to health, as well as viable spores. The analysis was performed at EMSL Analytical, Inc. of Cinnaminson, New Jersey.

6.1 Observations

Suspect mold growth was identified under the ceramic floor located at the back porch of the main floor. Mold was confirmed by the identification of *Stachybotrys* in a bulk sample collected of the suspect mold growth.

Refer to *Appendix G* for analytical mold bulk sample results.

6.2 Recommendations

Potential exposure to mold during renovation is presumed. Appropriate worker protection, use of engineering controls, and surface mold treatment on building materials to remain should be considered.

Building materials to remain in areas of visible suspect mold growth should be cleaned and have a mold inhibitor directly applied to the affected areas, if possible. Prior to disturbance, visible suspect mold growth remediation and water-damaged building materials removal should be performed within a negative pressure enclosure, using properly trained and protected workers. Removal should comply with EPA and the Institute of Inspection, Cleaning and Restoration Certification (IICRC) guidance.

7 Airborne Radon Information, Sampling and Procedure

7.1 Radon Facts and Health Effects

Radon is a naturally-occurring radioactive gas produced by the natural breakdown (decay) of uranium which is found in soil and rock throughout the United States. Radon travels through soil and enters buildings through cracks and other penetrations in building foundations. Eventually, the gas itself decays into radioactive particles (decay products) that can become trapped in the lungs during human respiration. As these particles in turn decay, they release small bursts of radiation which can damage lung tissue and lead to lung cancer over the course of a person's lifespan.

EPA studies have identified radon concentrations in outdoor air average approximately 0.4 picoCuries per liter of air (pCi/L). However, radon and its decay products can accumulate to a much higher

concentration inside a building. The EPA has adopted a recommended action level of 4.0 pCi/L; equal to or above which the EPA recommends that building owners take action to reduce the airborne radon levels within a building.

Radon is a colorless, odorless and tasteless gas, and thus, the only way to determine if an elevated level of radon gas is present in a building is to test the air. The air in each frequently-occupied room that is in contact with the ground should be tested, as even adjacent rooms can have significantly different levels of radon gas.

Again, radon is a known human carcinogen. Prolonged exposure to elevated radon concentrations causes an increased risk of lung cancer. Like other environmental pollutants, there is some uncertainty about the magnitude of radon health risks. However, scientists are more certain about radon risks than risks from most other cancer-causing environmental pollutants as estimates of radon risk are based on studies of cancer in humans (underground miners). Additional studies on more typical, non-occupationally exposed, populations are currently being conducted.

EPA estimates that radon may cause about 14,000 lung cancer deaths in the United States (US) each year, with a range of 7,000 to 30,000. The US Surgeon General has warned that radon is the second-leading cause of lung cancer deaths (after smoking), and is the leading cause among non-smokers.

7.2 Airborne Radon Sampling

From April 1, 2014, to April 3, 2014, EnviroScience representatives deployed passive radon gas detection canisters in limited areas within the residence located at 452 Willow Street. The canisters were retrieved at least 48 hours, but not later than 96 hours later. The canisters were supplied by Radon Testing Corporation of America (RTCA).

It is recommended that such canisters be placed at least 20-inches from the floor and 12-inches away from exterior walls. Also, it is recommended that the canisters not be placed near drafts resulting from Heating, Ventilating and Air Conditioning (HVAC) intakes and returns, doors, and at least 36-inches from windows. Also, canisters should not be exposed to direct sunlight, be covered up, or otherwise disturbed during the testing period. A closed building condition is also utilized for 12-hours prior to the start of the testing period.

Sample analysis was performed by RTCA and results are included in *Appendix H*.

7.3 Airborne Radon Quality Assurance Procedure

EPA strongly recommends that quality assurance measurements are included in radon measurement studies. Quality assurance measurements include side-by-side canisters (duplicates), and unexposed control canisters (blanks).

Duplicates are pairs of canisters deployed in the same location, side-by-side, for the same measurement period. Duplicates are placed in at least ten percent of all sampling locations. These duplicate canisters

are stored, deployed, removed, and shipped to the laboratory for analysis in the same manner as the other canisters. If either or both of the analyses in a duplicate pairing is above the EPA standard of 4.0 pCi/L the relative percent difference (RPD) between the two tests must be determined. If the allowable difference is exceeded, the test is determined to be invalid, and a new duplicate test must be conducted. If both canister results are below the EPA standard, then the RPD does not need to be calculated since, despite any disparity, both results are below the EPA standard.

Blanks are utilized to determine whether the manufacturing, shipping, storage, and processing of the canisters has affected the accuracy of airborne radon sampling procedures. Blanks are unopened, unexposed canisters which are deployed and shipped with the exposed canisters, so the processing laboratory treats the canisters without bias. The number of blanks should be at least five percent of the total number of canisters deployed, up to a maximum of 25 canisters.

7.4 Airborne Radon Analytical Results

Four canisters, including one duplicate and one blank, were deployed in target locations within the building during sampling that was performed April 1, 2014, to April 3, 2014. The concentrations of radon in the samples during the initial assessment ranged from 0.1 pCi/L to 2.6 pCi/L. The EPA threshold for radon is 4.0 pCi/L.

In *Table 6* below, the locations and results of quality control duplicate tests for April 1, 2014 to April 3, 2014, are listed.

Table 6
Duplicate Sample Results – April 1, 2014 – April 3, 2014

Location	Canister Numbers	Radon Concentration (pCi/Liter)			Relative Percent Difference (RPD, %)
		Sample	Sample Duplicate	Sample Average	
Living Room 1	2299541 & 2299429	0.5	0.6	0.55	Percent Difference Not Needed; (No Concentrations Above 4.0 pCi/Liter)

Note Duplicate testing results were satisfactory.

In *Table 7* below, the locations and results of quality control blank tests for April 1, 2014 to April 3, 2014, are listed:

Table 7
Blank Samples Results – April 1, 2014 – April 3, 2014

Location	Canister Numbers	Radon Concentration (pCi/Liter)
Basement	2299373	0.3

Note Blank testing results were satisfactory

In *Table 8* below, the locations, canister numbers, and radon gas concentrations are listed for the airborne radon assessment conducted on April 1, 2014 to April 3, 2014, are listed.

Table 8
Radon Sampling Results – April 1, 2014 – April 3, 2014

Location	Canister Numbers	Radon Concentration (pCi/Liter)
Living Room 1	2299541	0.5
Basement	2299434	2.6

7.5 Conclusion

During the course of the initial radon measurement assessment, four sampling canisters, including one duplicate and one blank, were placed in targeted locations within building located at 452 Willow Street in Waterbury, Connecticut. Each of the four samples analyzed indicated radon gas levels were below the EPA recommended action level of 4.0 pCi/L.

Refer to *Appendix I* for site photographs.

Report prepared by Environmental Technician Robert Hobbins.

Reviewed by:

Kevin McCarthy
Project Manager

Timothy M. Downey
Sr. Project Manager

FUSS & O'NEILL
EnviroScience, LLC

Appendix A

Fuss &O'Neill EnviroScience State Licenses and EPA Accreditations

0001657 FP **PRSRT TO 0 1564 06040
THOMAS M. CRUESS
146 HARTFORD RD
MANCHESTER CT 06040-5992

Dear Licensed/Certified Professional,
Attached you will find your validated license/certification for the coming year. Should you have any questions about your license/certificate renewal, please do not hesitate to write or call:

Department of Public Health (860) 509-7603
P.O. Box 340308
M.S.#12MCA http://www.dph.state.ct.us
Hartford, CT 06134-0308

Sincerely,

JEWEL MULLEN, MD, MPH, MPA, COMMISSIONER
DEPARTMENT OF PUBLIC HEALTH

INSTRUCTIONS:

1. Detach and sign each of the cards on this form.
2. Display the large card in a prominent place in your office or place of business.
3. The wallet card is for you to carry on your person. If you do not wish to carry the wallet card, place it in a secure place.
4. The employer's copy is for persons who must demonstrate current licensure/certification in order to retain employment or privileges. The employer's card is to be presented to the employer and kept by them as a part of your personnel file. Only one copy of this card can be supplied to you.

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
PURSUANT TO THE PROVISIONS OF THE GENERAL STATUTES OF CONNECTICUT
THE INDIVIDUAL NAMED BELOW IS LICENSED
BY THIS DEPARTMENT AS A
ASBESTOS CONSULTANT-INSPECTOR

LICENSE NO. 000210
CURRENT THROUGH 11/30/14
VALIDATION NO. 03-681422
THOMAS M. CRUESS

SIGNATURE COMMISSIONER

EMPLOYER'S COPY
STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
NAME
THOMAS M. CRUESS
VALIDATION NO. 03-681422 LICENSE NO. 000210 CURRENT THROUGH 11/30/14
PROFESSION
ASBESTOS CONSULTANT-INSPECTOR
SIGNATURE COMMISSIONER

WALLET CARD
STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
NAME
THOMAS M. CRUESS
VALIDATION NO. 03-681422 LICENSE NO. 000210 CURRENT THROUGH 11/30/14
PROFESSION
ASBESTOS CONSULTANT-INSPECTOR
SIGNATURE COMMISSIONER

Fuss & O'Neill EnviroScience, LLC

146 Hartford Road, Manchester, CT 06040 – (860) 646-2469

This is to certify that

Thomas Cruess

xxx-xx-8566

has successfully completed the

4 Hr. Asbestos Inspector Refresher

Asbestos Accreditation under TSCA Title II

40 CFR Part 763

John Rowinski, Principal Instructor

Robert L. May, Jr., Training Manager

September 4, 2013

Date of Course

AI-R-09/13-5

Certificate Number

September 4, 2013; A

Examination Date & Grade

September 4, 2014

Expiration Date

0001569 FP **PRSRT TO 0 1564 06040
THOMAS M CRUESS
146 HARTFORD RD
MANCHESTER CT 06040-5992

Dear Licensed/Certified Professional,
Attached you will find your validated license/certification for the coming year. Should you have any questions about your license/certificate renewal, please do not hesitate to write or call:

Department of Public Health (860) 509-7603
P.O. Box 340308
M.S.#12MQA http://www.dph.state.ct.us
Hartford, CT 06134-0308

Sincerely,

JEWEL MULLEN, MD, MPH, MPA, COMMISSIONER
DEPARTMENT OF PUBLIC HEALTH

INSTRUCTIONS:

1. Detach and sign each of the cards on this form.
2. Display the large card in a prominent place in your office or place of business.
3. The wallet card is for you to carry on your person. If you do not wish to carry the wallet card, place it in a secure place.
4. The employer's copy is for persons who must demonstrate current licensure/certification in order to retain employment or privileges. The employer's card is to be presented to the employer and kept by them as a part of your personnel file. Only one copy of this card can be supplied to you.

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
PURSUANT TO THE PROVISIONS OF THE GENERAL STATUTES OF CONNECTICUT
THE INDIVIDUAL NAMED BELOW IS CERTIFIED
BY THIS DEPARTMENT AS A
LEAD INSPECTOR

CERTIFICATION NO. 002208
CURRENT THROUGH 11/30/14
VALIDATION NO. 03-681434

THOMAS M CRUESS

SIGNATURE COMMISSIONER

EMPLOYER'S COPY
STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
NAME
THOMAS M CRUESS

VALIDATION NO.	CERTIFICATION NO.	CURRENT THROUGH
03-681434	002208	11/30/14

PROFESSION
LEAD INSPECTOR

SIGNATURE COMMISSIONER

WALLET CARD
STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
NAME
THOMAS M CRUESS

VALIDATION NO.	CERTIFICATION NO.	CURRENT THROUGH
03-681434	002208	11/30/14

PROFESSION
LEAD INSPECTOR

SIGNATURE COMMISSIONER

Fuss & O'Neill EnviroScience, LLC

146 Hartford Road, Manchester, CT 06040 – (860) 646-2469

This is to certify that

Tom Cruess

xxx-xx-8566

has successfully completed the

8 Hour Lead Inspector Risk Assessor Refresher Course

(Approved per Sec. 20-477, CT General Statutes)

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (U.S.C. 1001 and 15 U.S.C. 2615), I certify that this training complies with all applicable requirements of Title IV of TSCA, 40 CFR part 745 and any other applicable Federal, State, or local requirements.

Brian Santos, Principal Instructor

Robert L. May, Jr., Training Manager

February 20 & 25, 2014

Date of Course

LIRA-R-02/14-5

Certificate Number

February 25, 2014

Examination Date

February 25, 2015

Expiration Date

0001088 FP **PRSRT T5 0 0564 06040
JOHN R. HOBBINS
C/O FUSS & O'NEILL ENVIROSCIENCE, LLC
146 HARTFORD ROAD
MANCHESTER CT 06040

Dear Licensed/Certified Professional,

Attached you will find your validated license/certification for the coming year. Should you have any questions about your license/certificate renewal, please do not hesitate to write or call:

Department of Public Health (860) 509-7603
P.O. Box 340308
M.S.#12MQA http://www.dph.state.ct.us
Hartford, CT 06134-0308

Sincerely,

JEWEL MULLEN, MD, MPH, MPA, COMMISSIONER
DEPARTMENT OF PUBLIC HEALTH

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STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
PURSUANT TO THE PROVISIONS OF THE GENERAL STATUTES OF CONNECTICUT THE INDIVIDUAL NAMED BELOW IS LICENSED BY THIS DEPARTMENT AS A:

ASBESTOS CONSULTANT-INSPECTOR

LICENSE NO. 000700
CURRENT THROUGH 01/31/15
VALIDATION NO. 03-708142

JOHN R. HOBBINS

SIGNATURE COMMISSIONER

EMPLOYER'S COPY

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

NAME
JOHN R. HOBBINS

VALIDATION NO.	LICENSE NO.	CURRENT THROUGH
03-708142	000700	01/31/15

PROFESSION
ASBESTOS CONSULTANT-INSPECTOR

SIGNATURE COMMISSIONER

WALLET CARD

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

NAME
JOHN R. HOBBINS

VALIDATION NO.	LICENSE NO.	CURRENT THROUGH
03-708142	000700	01/31/15

PROFESSION
ASBESTOS CONSULTANT-INSPECTOR

SIGNATURE COMMISSIONER

Fuss & O'Neill EnviroScience, LLC

146 Hartford Road, Manchester, CT 06040 – (860) 646-2469

This is to certify that

John Robert Hobbins

xxx-xx-6853

has successfully completed the

4 Hr. Asbestos Inspector Refresher

Asbestos Accreditation under TSCA Title II

40 CFR Part 763

John Rowinski, Principal Instructor

Robert L. May, Jr., Training Manager

September 4, 2013

Date of Course

AI-R-09/13-6

Certificate Number

September 4, 2013; B-

Examination Date & Grade

September 4, 2014

Expiration Date

John R. Hobbins
C/O FUSS & O'NEILL ENVIROSCIENCE, LLC
146 HARTFORD ROAD
MANCHESTER, CT 06040

Dear Licensed/Certified Professional,
Attached you will find your validated license/certification for the coming year. Should you have any questions about your license/certificate renewal, please do not hesitate to write or call:

Department of Public Health
P.O. Box 340308
M.S.#12MQA
Hartford, CT 06134-0308

(860) 509-7603

http://www.dph.state.ct.us

Sincerely,

JEWEL MULLEN, MD, MPH, MPA, COMMISSIONER
DEPARTMENT OF PUBLIC HEALTH

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STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
PURSUANT TO THE PROVISIONS OF THE GENERAL STATUTES OF CONNECTICUT

THE INDIVIDUAL NAMED BELOW IS CERTIFIED BY THIS DEPARTMENT AS A
Lead Inspector

John R. Hobbins

CERTIFICATION NO. 2156
CURRENT THROUGH 01/31/2015
VALIDATION NO.
DUPLICATE

SIGNATURE
COMMISSIONER

EMPLOYER'S COPY
STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
NAME
John R. Hobbins
VALIDATION NO.
DUPLICATE
CERTIFICATION NO. 2156
CURRENT THROUGH 01/31/2015
PROFESSION
Lead Inspector
SIGNATURE
COMMISSIONER

WALLET CARD
STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
NAME
John R. Hobbins
VALIDATION NO.
DUPLICATE
CERTIFICATION NO. 2156
CURRENT THROUGH 01/31/2015
PROFESSION
Lead Inspector
SIGNATURE
COMMISSIONER

CERTIFICATE OF ACHIEVEMENT

This certifies that

John Robert Hobbins
97 Montowese Street, Branford, CT 06405
000-00-6853

has successfully completed the

INSPECTOR REFRESHER
Training Course
conducted by
Cardno ATC
73 William Franks Drive
West Springfield, MA 01089
(413) 781-0070

Neal B. Freuden
Principal Instructor: Neal Freuden

Gregory J. Morsch
Training Manager: Gregory Morsch

January 30, 2014
Date of Course

January 30, 2014
Exam Date

CTLIR-205
Certificate Number

January 30, 2015
Expiration Date

Training received complies with the requirements of the Connecticut Department of Public Health pursuant to Section 477 of the Connecticut General Statutes.

FUSS & O'NEILL
EnviroScience, LLC

Appendix B

Asbestos Sample Results and Chain of Custody Forms

OrderID: 041408985

041408985

FUSS & O'NEILL EnviroScience, LLC

www.fando.com

146 Hartford Road, Manchester, CT 06040 (860) 646-2469 Fax (860) 649-6883

SAMPLE LOG FOR ASBESTOS BULKS

Sheet 1 of 4

Project Name: QA-Residential Rehab, 452 Willow St, Waterbury, CT Project No. 20140277.A9E

Building: 452 Willow St Project Manager: K. McCarthy

Sample ID	Sample Location	Material	Result (%)
0401BH01A	Basement	Pipe Insulation	15% Chrysotile
0401BH01B	Basement	Pipe Insulation	
0401BH01C	Basement	Pipe Insulation	
0401BH02A	Basement	Mudded Pipe Fitting Insulation	15% Chrysotile
0401BH02B	Basement	Mudded Pipe Fitting Insulation	
0401BH02C	Basement	Mudded Pipe Fitting Insulation	
0401BH03A	3rd Floor	Grey Base Coat Ceiling Plaster	None Detected
0401BH03B	2nd Floor	Grey Base Coat Ceiling Plaster	
0401BH03C	1st Floor	Grey Base Coat Ceiling Plaster	
0401BH03D	3rd Floor	Grey Base Coat Wall Plaster	
0401BH03E	2nd Floor	Grey Base Coat Wall Plaster	
0401BH03F	1st Floor	Grey Base Coat Wall Plaster	

2014 APR 9 53

Analysis Method: ☒ PLM ☐ Other Turnaround Time 24 HR

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: _____. Please call the EnviroScience Laboratory if analyses will be late at (860) 646-2469.

Fax Results to the EnviroScience Laboratory at: 888-838-1160.

~~50~~ 51 cf

Special Instruction: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content <4%, positive stop on all point counts.

Samples collected by: B.H. **Date:** 4-1-14 **Time:**

Samples [Rec'd][Sent by] [BH][ ] **Date:** [4-2][ ] **Time:**

Samples Received by: VC FX **Date:** 4-7-14 **Time:** 9:00

Shipped To: ☒ EMSL State NJ ☐ Other

Method of Shipment: ☒ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other

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OrderID: 041408985

FUSS & O'NEILL
EnviroScience, LLC

041408985

www.fando.com

146 Hartford Road, Manchester, CT 06040

(860) 646-2469 Fax (860) 649-6883

SAMPLE LOG FOR ASBESTOS BULKS

Sheet 2 of 4

Project Name: QA–Residential Rehab, 452 Willow St, Waterbury, CT Project No. 20140277.A9E

Building: 452 Willow St Project Manager: K. McCarthy

Sample ID	Sample Location	Material	Result (%)
0401BH03G	3rd Floor	Grey Base Coat Wall Plaster	None Detected
0401BH04A	3rd Floor	White Top Coat Ceiling Plaster	
0401BH04B	2nd Floor	White Top Coat Ceiling Plaster	
0401BH04C	1st Floor	White Top Coat Ceiling Plaster	
0401BH04D	3rd Floor	White Top Coat Wall Plaster	
0401BH04E	2nd Floor	White Top Coat Wall Plaster	
0401BH04F	1st Floor	White Top Coat Wall Plaster	
0401BH04G	3rd Floor	White Top Coat Wall Plaster	
0401BH05A	Basement	Ceiling Wallboard	
0401BH05B	Basement	Ceiling Wallboard	
0401BH06A	3rd Floor	Wall Fiberboard	
0401BH06B	3rd Floor	Wall Fiberboard	

2014 APR 11 A 9:53

Analysis Method: ☒ PLM ☐ Other Turnaround Time 24 HR

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: _____. Please call the EnviroScience Laboratory if analyses will be late at (860) 646 2469.

Fax Results to the EnviroScience Laboratory at: 888–838–1160.

Special Instruction: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content <4%, positive stop on all point counts.

Samples collected by: B.H. **Date:** 4-1-14 **Time:**

Samples [Rec'd][Sent by] BH. **Date:** 4-2 **Time:**

Samples Received by: **Date:** **Time:**

Shipped To: ☒ EMSL State NJ ☐ Other

Method of Shipment: ☒ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other

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OrderID: 041408985

FUSS & O'NEILL
EnviroScience, LLC

146 Hartford Road, Manchester, CT 06040

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(860) 646 2469 Fax (860) 649 6883

041408985

SAMPLE LOG FOR ASBESTOS BULKS

Sheet 3 of 4

Project Name: QA-Residential Rehab, 452 Willow St, Waterbury, CT Project No. 20140277.A9E

Building: 452 Willow St Project Manager: K. McCarthy

Sample ID	Sample Location	Material	Result (%)
0401BH07A	1st Floor	Sheetrock	None Detected
0401BH07B	1st Floor	Sheetrock	
0401BH08A	1st Floor	Taping/Joint Compound	
0401BH08B	1st Floor	Taping/Joint Compound	
0401BH09	1st Floor	Sheetrock & Taping/Joint Compound Composite	
0401BH10A	Back Porch at Kitchen	Ceramic Floor Tile Underlayment	
0401BH10B	Back Porch at Kitchen	Ceramic Floor Tile Underlayment	
0401BH11A	Back Porch at Kitchen	Ceramic Floor Tile Grout	
0401BH11B	Back Porch at Kitchen	Ceramic Floor Tile Grout	
0401BH12A	Back Porch at Kitchen	Ceramic Floor Tile	
0401BH12B	Back Porch at Kitchen	Ceramic Floor Tile	
0401BH13A	1st Floor	Red Vapor Barrier under Wood Flooring	

Analysis Method: ☒ PLM ☐ Other Turnaround Time 24 HR

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: _____. Please call the EnviroScience Laboratory if analyses will be late at (860) 646-2469.

Fax Results to the EnviroScience Laboratory at: 888-838-1160.

Special Instruction: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content <4%, positive stop on all point counts.

Samples collected by: B.H. **Date:** 4-1-14 **Time:** _____

Samples [Rec'd][Sent by] [BH] [ ] **Date:** [4-2] [ ] **Time:** _____

Samples Received by: _____ **Date:** _____ **Time:** _____

Shipped To: ☒ EMSL State NJ ☐ Other _____

Method of Shipment: ☒ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other

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OrderID: 041408985

FUSS & O'NEILL
EnviroScience, LLC

041408985

www.fando.com

146 Hartford Road, Manchester, CT 06040 (860) 646 2469 Fax (860) 649 6883

SAMPLE LOG FOR ASBESTOS BULKS

Sheet 4 of 4

Project Name: QA–Residential Rehab, 452 Willow St, Waterbury, CT Project No. 20140277.A9E

Building: 452 Willow St Project Manager: K. McCarthy

Sample ID	Sample Location	Material	Result (%)
0401BH13B	1st Floor	Red Vapor Barrier under Wood Flooring	None Detected
0401BH14A	3rd Floor	Chimney Brick	
0401BH14B	3rd Floor	Chimney Brick	
0401BH15A	3rd Floor	Chimney Brick Grout	
0401BH15B	3rd Floor	Chimney Brick Grout	
0401BH16A	Basement	Fieldstone Foundation Wall	
0401BH16B	Basement	Fieldstone Foundation Wall	
0401BH17A	Basement	Fieldstone Foundation Wall Mortar	
0401BH17B	Basement	Fieldstone Foundation Wall Mortar	
0401BH18A	Basement	Chimney Flue Cement	
0401BH18B	Basement	Chimney Flue Cement	
0401BH19A	Basement	Concrete on Old Furnace Oil Supply Line	
0401BH19B	Basement	Concrete on Old Furnace Oil Supply Line	
0401BH20A	Basement	Concrete Floor	
0401BH20B	Basement	Concrete Floor	

Analysis Method: ☒ PLM ☐ Other Turnaround Time 24 HR

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: _____. Please call the EnviroScience Laboratory if analyses will be late at (860) 646-2469.

Fax Results to the EnviroScience Laboratory at: 888–838–1160.

Special Instruction: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 point count all samples of asbestos content <4%, positive stop on all point counts.

Samples collected by: B.H. **Date:** 4-1-14 **Time:** _____

Samples [Rec'd][Sent by] BH **Date:** 4-2 **Time:** _____

Samples Received by: _____ **Date:** _____ **Time:** _____

Shipped To: ☒ EMSL State NJ ☐ Other _____

Method of Shipment: ☒ Fed Ex ☐ UPS Overnight ☐ UPS Ground ☐ Other

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EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com cinnaslab@EMSL.com

EMSL Order:	041408985
CustomerID:	ENVI54
CustomerPO:	
ProjectID:	

Attn: **Kevin McCarthy**
Fuss & O'Neill EnviroScience, LLC
146 Hartford Road
Manchester, CT 06040

Phone:	(860) 646-2469
Fax:	(888) 838-1160
Received:	04/07/14 9:00 AM
Analysis Date:	4/8/2014
Collected:	4/1/2014

Project: 20140277.A9E QA-Rwsidentail Rehab, 452 Willow St, Waterbury, CT

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
0401BH01A 041408985-0001	Basement - pipe insulaiton	Gray/White Fibrous Homogeneous		85% Non-fibrous (other)	15% Chrysotile
0401BH01B 041408985-0002	Basement - pipe insulaiton				Stop Positive (Not Analyzed)
0401BH01C 041408985-0003	Basement - pipe insulaiton				Stop Positive (Not Analyzed)
0401BH02A 041408985-0004	Basement - mudded pipe fitting insulation	Gray/White Fibrous Homogeneous		85% Non-fibrous (other)	15% Chrysotile
0401BH02B 041408985-0005	Basement - mudded pipe fitting insulation				Stop Positive (Not Analyzed)
0401BH02C 041408985-0006	Basement - mudded pipe fitting insulation				Stop Positive (Not Analyzed)
0401BH03A 041408985-0007	3rd floor - grey base coat ceiling plaster	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
0401BH03B 041408985-0008	2nd floor - grey base coat ceiling plaster	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
0401BH03C 041408985-0009	1st floor - grey base coat ceiling plaster	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Brett Poulton (27)
Samantha Rundstorm (20)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100184, NYS ELAP 10872, NJ DEP 03036, PA ID# 68-00367

Initial report from 04/08/2014 07:29:20

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com cinnaslab@EMSL.com

EMSL Order: 041408985
CustomerID: ENVI54
CustomerPO:
ProjectID:

Attn: **Kevin McCarthy**
Fuss & O'Neill EnviroScience, LLC
146 Hartford Road
Manchester, CT 06040

Phone: (860) 646-2469
Fax: (888) 838-1160
Received: 04/07/14 9:00 AM
Analysis Date: 4/8/2014
Collected: 4/1/2014

Project: 20140277.A9E QA-Rwaldentail Rehab, 452 Willow St, Waterbury, CT

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
0401BH03D 041408985-0010	3rd floor - grey base coat wall plaster	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
0401BH03E 041408985-0011	2nd floor - grey base coat wall plaster	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
0401BH03F 041408985-0012	1st floor - grey base coat wall plaster	Gray Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (other)	None Detected
0401BH03G 041408985-0013	3rd floor - grey base coat wall plaster	Gray Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (other)	None Detected
0401BH04A 041408985-0014	3rd floor - white top coat ceiling plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
0401BH04B 041408985-0015	2nd floor - white top coat ceiling plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
0401BH04C 041408985-0016	1st floor - white top coat ceiling plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
0401BH04D 041408985-0017	3rdfloor - white top coat wall plaster	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)
Brett Poulton (27)
Samantha Rundstorm (20)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036, PA ID# 68-00367

Initial report from 04/08/2014 07:29:20

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com cinnaslab@EMSL.com

EMSL Order:	041408985
CustomerID:	ENVI54
CustomerPO:	
ProjectID:	

Attn: **Kevin McCarthy**
Fuss & O'Neill EnviroScience, LLC
146 Hartford Road
Manchester, CT 06040

Phone:	(860) 646-2469
Fax:	(888) 838-1160
Received:	04/07/14 9:00 AM
Analysis Date:	4/8/2014
Collected:	4/1/2014

Project: 20140277.A9E QA-Rwsidentail Rehab, 452 Willow St, Waterbury, CT

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	Description	Appearance	%	Fibrous	%	Non-Fibrous	% Type
0401BH04E 041408985-0018	2nd floor - white top coat wall plaster	White Non-Fibrous Homogeneous			100%	Non-fibrous (other)	None Detected
0401BH04F 041408985-0019	1st floor - white top coat wall plaster	White Fibrous Homogeneous			100%	Non-fibrous (other)	None Detected
0401BH04G 041408985-0020	3rd floor - white top coat wall plaster	White Non-Fibrous Homogeneous			100%	Non-fibrous (other)	None Detected
0401BH05A 041408985-0021	Basement - ceiling wallboard	Brown Fibrous Homogeneous	90%	Cellulose	10%	Non-fibrous (other)	None Detected
0401BH05B 041408985-0022	Basement - ceiling wallboard	Brown Fibrous Homogeneous	98%	Cellulose	2%	Non-fibrous (other)	None Detected
0401BH06A 041408985-0023	3rd floor - wall fiberboard	Brown Fibrous Homogeneous	85%	Cellulose	15%	Non-fibrous (other)	None Detected
0401BH06B 041408985-0024	3rd floor - wall fiberboard	Brown Fibrous Homogeneous	98%	Cellulose	2%	Non-fibrous (other)	None Detected
0401BH07A 041408985-0025	1st floor - sheetrock	White Fibrous Homogeneous	15% 10%	Cellulose Glass	75%	Non-fibrous (other)	None Detected

Analyst(s)

Brett Poulton (27)
Samantha Rundstorm (20)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036, PA ID# 68-00367

Initial report from 04/08/2014 07:29:20

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com cinnaslab@EMSL.com

EMSL Order:	041408985
CustomerID:	ENVI54
CustomerPO:	
ProjectID:	

Attn: **Kevin McCarthy**
Fuss & O'Neill EnviroScience, LLC
146 Hartford Road
Manchester, CT 06040

Phone:	(860) 646-2469
Fax:	(888) 838-1160
Received:	04/07/14 9:00 AM
Analysis Date:	4/8/2014
Collected:	4/1/2014

Project: 20140277.A9E QA-Rwsidentail Rehab, 452 Willow St, Waterbury, CT

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
0401BH07B 041408985-0026	1st floor - sheetrock	Brown Fibrous Homogeneous	20% Cellulose	80% Non-fibrous (other)	None Detected
0401BH08A 041408985-0027	1st floor - taping/joint compound	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
0401BH08B 041408985-0028	1st floor - taping/joint compound	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
0401BH09 041408985-0029	1st floor - sheetrock & taping/joint compound composite	Various Fibrous Heterogeneous	20% Cellulose This is a composite result of wallboard, jt. compound, and tape	80% Non-fibrous (other)	None Detected
0401BH10A 041408985-0030	Back porch at kitchen - ceramic floor tile underlayment	Gray Fibrous Homogeneous	25% Cellulose	75% Non-fibrous (other)	None Detected
0401BH10B 041408985-0031	Back porch at kitchen - ceramic floor tile underlayment	Gray Fibrous Homogeneous	20% Cellulose	80% Non-fibrous (other)	None Detected
0401BH11A 041408985-0032	Back porch at kitchen - ceramic floor tile grout	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)
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Samantha Rundstorm (20)

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036, PA ID# 68-00367

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200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com cinnasbleb@EMSL.com

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Attn: **Kevin McCarthy**
Fuss & O'Neill EnviroScience, LLC
146 Hartford Road
Manchester, CT 06040

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Fax:	(888) 838-1160
Received:	04/07/14 9:00 AM
Analysis Date:	4/8/2014
Collected:	4/1/2014

Project: 20140277.ABE QA-Rwaldentall Rehab, 452 Willow St, Waterbury, CT

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
0401BH11B 041408985-0033	Back porch at kitchen - ceramic floor tile grout	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
0401BH12A 041408985-0034	Back porch at kitchen - ceramic floor tile	Red Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
0401BH12B 041408985-0035	Back porch at kitchen - ceramic floor tile	Red Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
0401BH13A 041408985-0036	1st floor - red vapor barrier under wood flooring	Brown/Red Fibrous Homogeneous	90% Cellulose	10% Non-fibrous (other)	None Detected
0401BH13B 041408985-0037	1st floor - red vapor barrier under wood flooring	Brown/Red Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (other)	None Detected
0401BH14A 041408985-0038	3rd floor - chimney brick	Red Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
0401BH14B 041408985-0039	3rd floor - chimney brick	Red Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
0401BH15A 041408985-0040	3rd floor - chimney brick grout	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)
Brett Poulton (27)
Samantha Rundstorm (20)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

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Fuss & O'Neill EnviroScience, LLC
146 Hartford Road
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Project: 20140277.A9E QA-Rwaldentall Rehab, 452 Willow St, Waterbury, CT

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Type
0401BH15B 041408985-0041	3rd floor - chimney brick grout	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
0401BH16A 041408985-0042	Basement - fieldstone foundation wall	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
0401BH16B 041408985-0043	Basement - fieldstone foundation wall	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
0401BH17A 041408985-0044	Basement - fieldstone foundation wall mortar	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
0401BH17B 041408985-0045	Basement - fieldstone foundation wall mortar	Gray/White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
0401BH18A 041408985-0046	Basement - chimney flue cement	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
0401BH18B 041408985-0047	Basement - chimney flue cement	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
0401BH19A 041408985-0048	Basement - concrete on old furnace oil supply line	Brown/Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)
Brett Poulton (27)
Samantha Rundstorm (20)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

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200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
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Project: 20140277.A9E QA-Rwsidentail Rehab, 452 Willow St, Waterbury, CT

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
0401BH19B *041408985-0049*	Basement - concrete on old furnace oil supply line	Brown/Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
0401BH20A *041408985-0050*	Basement - concrete floor	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
0401BH20B *041408985-0051*	Basement - concrete floor	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)
Brett Poulton (27)
Samantha Rundstorm (20)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

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OrderID: 041412919

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SAMPLE LOG FOR ASBESTOS BULKS

Sheet 1 of 1

Project Name: Storm Sandy Residential Rehab–452 Willow Street, Waterbury, CT Project No. 20140277.A9E

Building: 452 Willow Street Project Manager: K. McCarthy

Sample ID	Sample Location	Material	Result (%)
0508BH01A	Exterior of Building	Exterior Window Glazing Compounds	
0508BH01B	Exterior of Building	Exterior Window Glazing Compounds	
0508BH01C	Exterior of Building	Exterior Window Glazing Compounds	

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Analysis Method: ☒ PLM ☐ Other Turnaround Time 24 hour

Based on the turnaround time indicated above, analyses are due to EnviroScience on or before this date: _____. Please call the EnviroScience Laboratory if analyses will be late at (860) 646-2469.

Fax Results to the EnviroScience Laboratory at: 888-838-1160.

Special Instructions: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. EPA 400 Point Count all samples of content <4%, positive stop on all point counts.

Samples collected by: B. Hobbin **Date:** 5-8-14 **Time:** _____

Samples [Rec'd][Sent by] [BH][ ] **Date:** [5-9-14][ ] **Time:** _____

Samples Received by: DMB - fx **Date:** 5-10-14 **Time:** 10A

Shipped To: ☒ EMSL State NJ ☐ Other _____

Method of Shipment: ☒ FedEx ☐ Other _____

3

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FX-8043-3951-3477

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200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com cinnasblab@EMSL.com

EMSL Order:	041412919
CustomerID:	ENVI54
CustomerPO:	201440277.A9E
ProjectID:	

Attn: **Kevin McCarthy**
Fuss & O'Neill EnviroScience, LLC
146 Hartford Road
Manchester, CT 06040

Phone:	(860) 646-2469
Fax:	(888) 838-1160
Received:	05/10/14 10:00 AM
Analysis Date:	5/12/2014
Collected:	5/8/2014

Project: **Storm Sandy Residential Rehab- 452 Willow Street, Waterbury, CT/ 20140277.A9E**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
0508BH01A *041412919-0001*	Exterior of Building - Exterior Window Glazing Compounds	Beige Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
0508BH01B *041412919-0002*	Exterior of Building - Exterior Window Glazing Compounds	Beige Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
0508BH01C *041412919-0003*	Exterior of Building - Exterior Window Glazing Compounds	Beige Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**

Analyst(s)
Christopher Mercer (1)
Patrick Carr (2)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

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Appendix C

Lead Paint Testing Procedures and Equipment

Standard Operating Procedures
HUD and State of Connecticut Lead-Based Paint Inspections

Testing Procedures and Equipment

The U. S. Department of Housing and Urban Development (HUD) "Guidelines for the Evaluation and Control of Lead Hazards in Housing, September 1997" were consulted for this lead evaluation. HUD has been the agency at the federal level with responsibility for the establishment of national lead-based paint standards for testing and abatement. The HUD document will be referenced as the Guidelines in this report. The State of Connecticut Department of Public Health's current lead regulations, Lead Poisoning Prevention and Control (19a-111-1 through 19a-111-11) were also consulted.

This lead evaluation was comprehensive. A comprehensive inspection means that representative painted surfaces were systematically evaluated on a room-by-room basis in accordance with the Guidelines and the State of Connecticut regulations.

Lead-based paint surfaces and components were identified by utilizing on-site x-ray fluorescence (XRF) instruments. EnviroScience Consultants, Inc. owns and utilizes Radiation Monitoring Device LPA-1s (RMD instruments) exclusively for lead-based paint testing. Each instrument is operated in accordance with state and federal and manufacturer standards on the use of the instruments. State and federal protocols provide, with the exception of wall surfaces, one reading with the instrument on a representative component in each room, i.e., baseboard, chair rail, etc., as sufficient to establish the lead paint classification of all the representatives of that component type in a room. In the case of walls, because of the large spatial areas involved and the variability in lead content in paint over such large areas, the federal and state governments want a reading on each wall surface in a room. Therefore, representative testing is not permitted for walls.

The federal government has developed Performance Characteristic Sheets (PCS) for the type of instrument cited above. Each instrument must be calibrated in accordance with these PCSs on a 1.0-milligram lead standard. Each of EnviroScience's instruments has one of these standards assigned to it. Some of the standards were purchased directly from the government and the others from the manufacturers of the instruments.

For the RMD in the standard reading mode on metal, a Substrate Equivalent Lead (SEL) concentration has to be determined. To determine the SEL, the paint is removed from the surface of the component to obtain a bare substrate reading. After removing the paint, the surface is wiped with a 5% trisodium phosphate solution (a heavy duty cleaner). All paint residue is collected and properly disposed. Once the paint and surrounding area are cleaned, the XRF is utilized to determine the SEL for each surface. The SEL values are subtracted from the XRF values to determine the Corrected Lead Concentration (CLC). The CLC is the lead content of the paint on the component tested.

The RMD instrument has federal government-determined positive and negative ranges for the definition of lead-based paint. XRF results are classified using either the threshold or the inconclusive range. For the threshold, results are classified as positive if they are greater than or equal to the threshold and negative if they are less than the threshold. There is no inconclusive

classification when using the threshold values associated with an RMD instrument. The ranges for the RMD instrument and their various operating modes are as follows:

Radiation Monitoring Device LPA Analyzer 1

30-Second Standard Mode Reading Description	Substrate	Threshold (mg/cm²)
Results corrected for substrate bias on metal substrate only.	Brick	1.0
	Concrete	1.0
	Drywall	1.0
	Metal	0.9
	Plaster	1.0
	Wood	1.0

Quick Mode Reading Description	Substrate	Threshold (mg/cm²)	Inconclusive Range (mg/cm²)
Readings not corrected for substrate bias on any substrate.	Brick	1.0	None
	Concrete	1.0	None
	Drywall	1.0	None
	Metal	1.0	None
	Plaster	1.0	None
	Wood	1.0	None

Prior to the start of any testing, a sketch of the building is drawn, and side designations are given to help identify exactly where readings were taken. Drawings depicting the room-numbering scheme are located on the cover page(s) for the building(s) inspected. Each side of the building was labeled A, B, C, or D. The wall "A" side of the unit is generally the side of primary entrance into a dwelling, and this room is always Room 1. Areas in the units include rooms, hallways, and closets. Areas are numbered in a clockwise fashion as building construction allows. This allows the inspector to indicate which substrate surface was tested. The condition of the surface is described by a check mark in the appropriate column, under the heading "condition of surface" on the testing form.

When more than one surface type was present on a side, the component tested was indicated with a number. If two windows were present on a building side, they were numbered left to right. Closet shelves and shelf supports were numbered top to bottom.

It is understood that the room layouts presented in the report are in conformance with the conditions that exist at the time the testing is performed. EnviroScience avoids labeling a room solely by its current functional use (i.e., living room, bedroom, etc.) since this use can change over time. Similarly, room layouts can change dramatically as dwellings are renovated and additions are built, incorporating existing rooms, or existing interior walls are moved or eliminated altogether.

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Lead Dust Wipe Sampling Protocol

Data Collection

A. A description of the sample location is recorded.

B. Surface type (floor, windowsill, window well) is noted.

C. Surface area measurements are recorded.

Wipe Sampling Method

A. The area to be wiped is identified and measured.

B. A disposable glove is put on and the "ghost wipe" package is opened.

C. Without touching any other surface, the wipe is opened and placed flat down on the surface. Using firm, consistent pressure, a wipe is taken in a single "S" motion.

D. Next the wipe is folded in half with the contaminated side facing inward and another wipe is taken again at 90 degrees to the first "S" wipe. Do not use a scrubbing motion, but be sure to collect all visible dust in the measured area.

E. The wipe is folded again with the contaminated side inward. Without touching any other surface, the wipe is placed into a plastic centrifuge tube. The tube is sealed and labeled. The sample number indicates the date and sampler's identity.

F. The samples are submitted to our laboratory on our standard sample log. Date and time of transfer is recorded to ensure proper chain of custody. The analytical procedure utilized is a modified EPA SW-846-3050. Blanks are submitted in accordance with EnviroScience's QA/QC program.

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Lead In Soil Composite Sampling Protocol

Linear Transect Method:

For use around roadways, buildings, and other structures such as painted fencing, concrete walls, etc. Each side of the building is labeled with a letter. The 'A' side of the building is the street side. The remaining sides are labeled B, C, and D, clockwise around the building. Fencing and concrete walls are similarly labeled if there is a street side. Otherwise, along with roadways, these structures can be labeled using the directional points North, South, East and West.

1. Linear transects are established parallel to the building, wall, fence or roadway at 2 foot intervals.

2. Three (3) to ten (10) distinct locations roughly equidistant from one another along the transect line are selected as sample points. As a general rule, we would like to see five sampling points for each 100 feet of transect line, but sample points should be at least 2 feet apart, so in smaller areas (less than 10 feet), fewer samples may be collected.

3. Samples of the top one-half inch (.5") of soil should be taken using a metal spoon or stainless-steel scoop. Collect soil until a circular hole of approximately 2 inches in diameter (0.5" deep) has been created. Samples from each of the sampling points should be composited into a 24-ounce plastic bag of at least 3-mil in weight. The bags should be either zip-locked or foldable with puncture proof tabs.

4. After each composite sample is collected, the sampling spoon or scoop should be thoroughly cleaned with a disposable wipe to prevent cross contamination of other composite samples to be collected in other areas on the site.

5. The soil samples are dried, weighed out and digested in nitric acid according to EPA Method 3050. Analysis is performed by direct aspiration flame atomic absorption spectrophotometry according to EPA Method 7420. Results are expressed in milligrams per kilogram (mg/kg), or parts-per-million (ppm).

Grid Method:

In other areas, such as play areas and other open spaces, an X shaped axis should be developed with directional reference points of North, South, East and West. At least five, but not more than ten sampling points should be designated along each axis. The sampling points should be equidistant from one another and should be at least one foot distant from each other.

The sampling and compositing procedures outlined in the linear transect method should be followed for each axis.

For all soil sampling, a property sketch should be drawn. It is recommended that you use the space provided on the back of the lead in soil sample log.

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Appendix D

Lead Testing Field Data Sheets

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146 Hartford Road, Manchester, CT 06040

(860) 646-2469 Fax (860) 649-6883

LEAD INSPECTION COVER SHEET

Inspector's Information

Inspector's Name: Robert Hobbins
License Number: 2156
XRF Model: LPA-1B
Serial Number: 1377
Date of Inspection: April 1, 2014
Project Number: 20140277.A9E

Property Information

Building Address: 452 Willow Street
(Street)

Waterbury (City) CT (State) Age of Property: N/A

Describe Structure:
Sheetrock/plaster ceilings/walls with wood/vinyl/metal windows and doors systems and concrete/wood floor
wood exterior siding, wood porch components

Are there lead hazards present? ☐ Yes ☒ No
Were lead dust wipes taken? ☐ Yes ☒ No
Were soil samples collected? ☐ Yes ☒ No
Were drinking water samples collected? ☐ Yes ☒ No

XRF Calibration Check

Calibration Paint Film Used: ☐ NIST 1.02 mg/cm² ☒ Manufacturer's Standard 1.0 mg/cm²

Calibration Check Limits Used: ☐ RMD (0.7 to 1.3 mg/cm² inclusive)
☐ Scitec MAP4 (0.6 to 1.2 mg/cm² inclusive)

	Hour	First Reading	Second Reading	Third Reading	Average
First Check					
Second Check					
Third Check					
Fourth Check					

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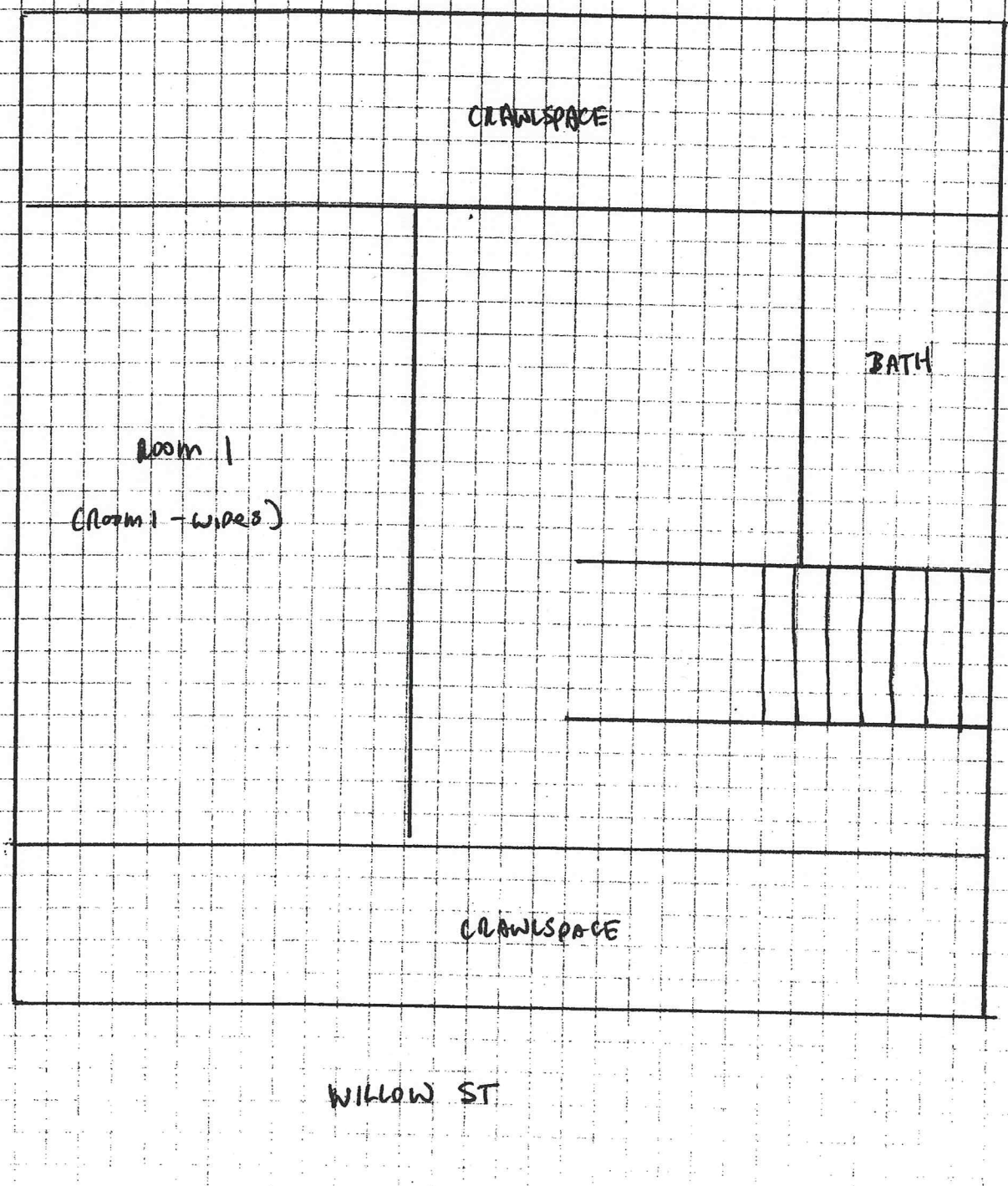
Prepared By	Date	Checked By	Date	Project No

3RD FLOOR

Sheet No
of



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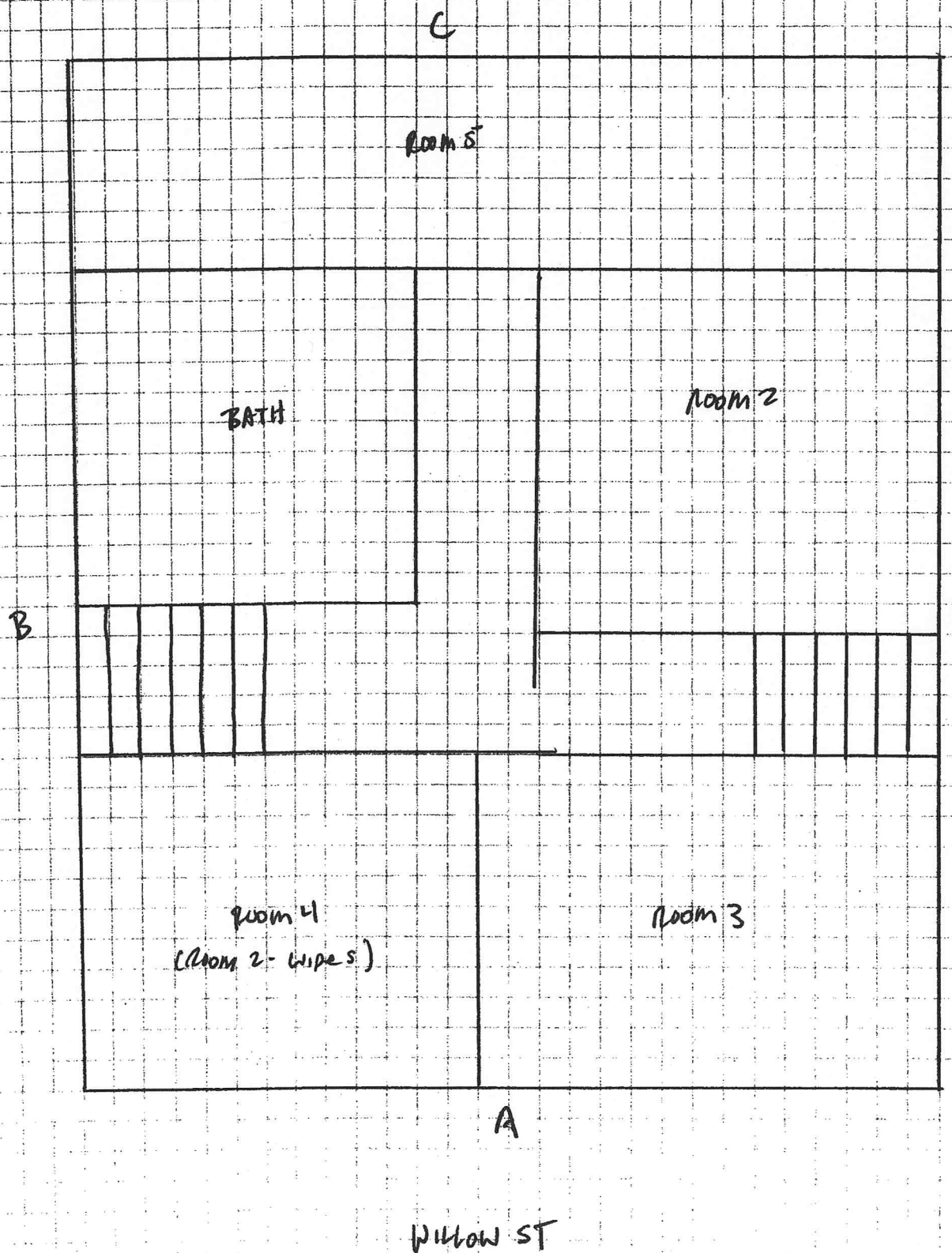
2ND FLOOR

Sheet No
of



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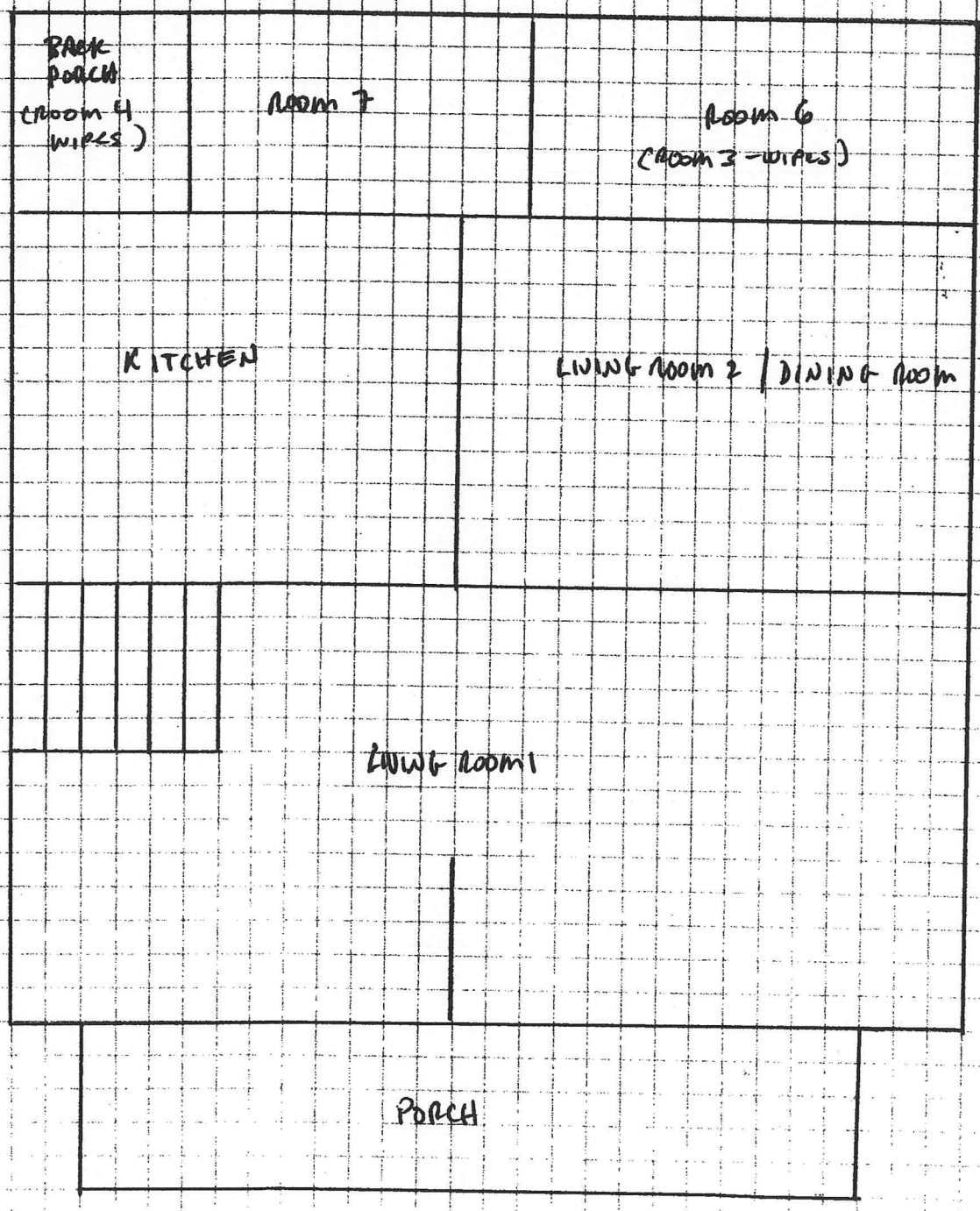
MAIN FLOOR

Sheet No
of



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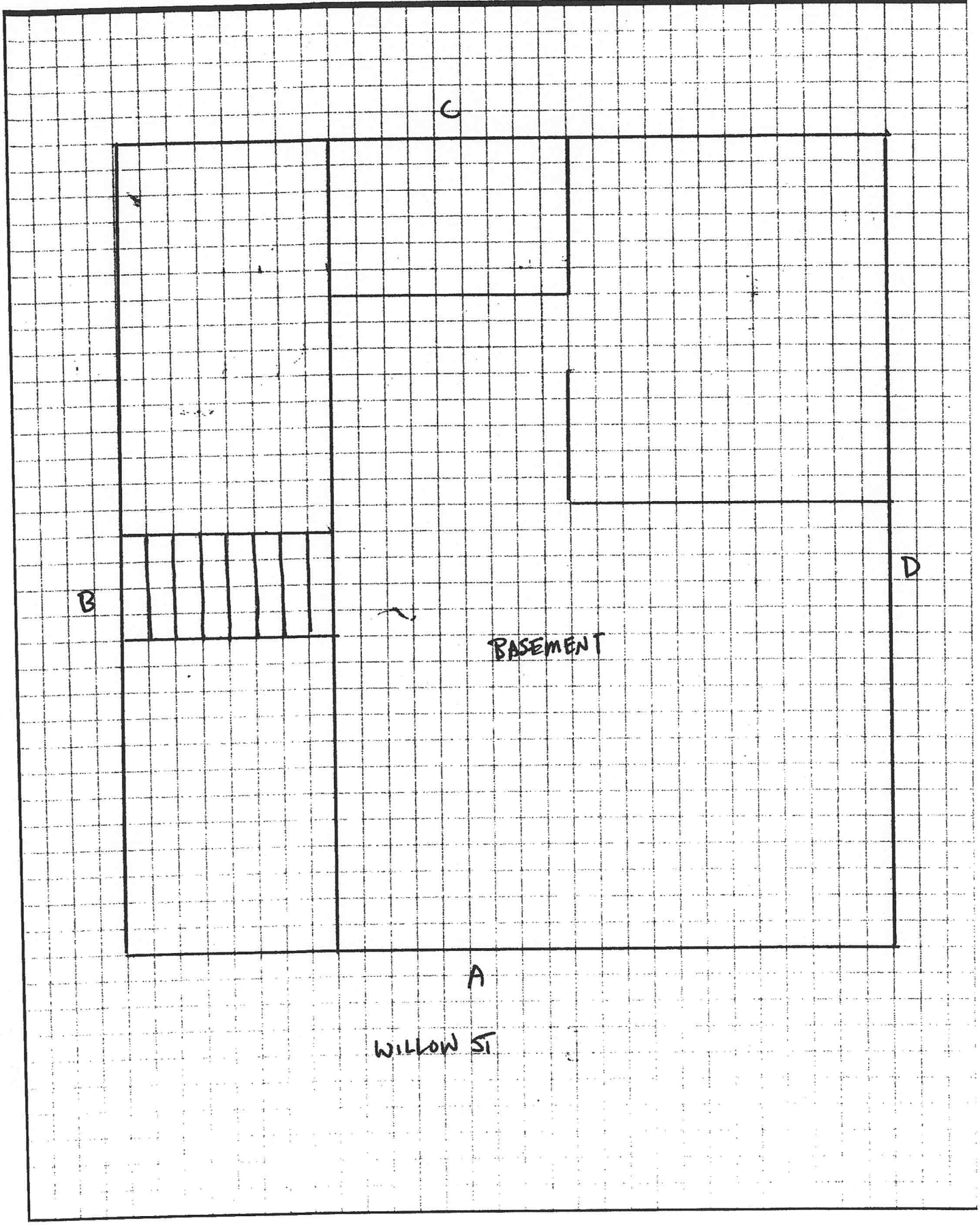
Prepared By	Date	Checked By	Date	Project No

Sheet No
of



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XRF FIELD DATA SHEET – INTERIOR ROOM

Address: 452 Willow Street, Waterbury, CT **Apt. #:**

Floor: Basement **Room:** **Page** 1 **of** 14

Project Name: 425 Willow Street **Project Number:** 20140277A9E

Project Manager: K. McCarthy (If Positive - Check All That Apply)

Side	Surface	XRF Readings	POS	Substrate	Defective	Chewable	Friction	Impact	Comments
	Floor								
	Baseboards								
A	Wall Partition	-0.0		W					
B	Wall	9.1	✓	SR	Y				
C	Wall								
D	Wall								
	Chair rail								
	Ceiling								
	Crown Molding								
	Door	7.9	✓	W	Y				
	Casing	8.6	✓	W	Y				
	Jamb	0.1	✓	W					
	Door								
	Casing								
	Jamb								
	Window Trim								
	Sill								
	Sash								
	Well								
	Cabinet Base								
	Door Exterior	2.2	✓	W	Y				
	Door Interior	7.8	✓	W	Y				
	Walls								
	Shelves								
	Shelf Supports								
	Closet Shelf								
	Shelf Supports								
	Radiator								
	Wall Molding								

* Substrate Type: Metal = M, Wood = W, Plaster = P, Sheetrock = S, Concrete = C, Brick = B
N/A = Not Accessible; N/C = Not Coated; COV = Covered; VR = Vinyl Replacement

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XRF FIELD DATA SHEET – INTERIOR ROOM

Address: 452 Willow Street, Waterbury, CT **Apt. #:**

Floor: 2nd FLOOR **Room:** corridor **Page** 2 **of** 4

Project Name: 425 Willow Street **Project Number:** 20140277A9E

Project Manager: K. McCarthy (If Positive - Check All That Apply)

Side	Surface	XRF Readings	POS	Substrate	Defective	Chewable	Friction	Impact	Comments
	Floor								
	Baseboards	0.1		W					
A	Wall	0.6		←	PB				
B	Wall	0.7		←	PB				
C	Wall	0.5		←	PB				
D	Wall	79.9	✓	←	PB NO				
	Chair rail								
	Ceiling	0.0		SR					
	Crown Molding								
	Door	0.0		W					Drawers · 79.9 ✓ W NO.
	Casing	0.0		W					
	Jamb	0.1		W					
	Door								
	Casing								
	Jamb								
	Window Trim	0.8		W					
	Sill	0.4		W					
	Sash	0.2		W					
	Well								
	Cabinet Base								
	Door Exterior								
	Door Interior								
	Walls								
	Shelves								
	Shelf Supports								
	Closet Shelf								
	Shelf Supports	79.9	✓	W	NO				
	Radiator								
	Wall Molding								
	Stair Banister	0.1	WK	W					Stringer 3.6 ✓ NO
	↓ Tread	3.6	✓	W	NO				
	↓ Riser	1.3	✓	W	NO				

* Substrate Type: Metal = M, Wood = W, Plaster = P, Sheetrock = S, Concrete = C, Brick = B
N/A = Not Accessible; N/C = Not Coated; COV = Covered; VR = Vinyl Replacement

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XRF FIELD DATA SHEET – INTERIOR ROOM

Address: 452 Willow ST, Waterbury **Apt. #:** _____

Floor: 3RD **Room:** room 1 **Page** ____ **of** ____

Project Name: _____ **Project Number:** _____

Project Manager: K. McCarthy **(If Positive - Check All That Apply)** * Substrate Type: Metal = M, Wood = W, Plaster = P, Sheetrock = S, Concrete = C, Brick = B, N/A = Not Accessible; N/C = Not Coated; COV = Covered; VR = Vinyl Replacement

Side	Surface	XRF Readings	POS	Substrate	Defective	Chewable	Friction	Impact	Comments
	Floor								
	Baseboards	0.1		W					
A	Wall	-0.0		SR					
B	Wall	0.2							
C	Wall	-0.3							
D	Wall	0.1							
	Chair rail								
	Ceiling	0.1		SR					
	Crown Molding								
	Door	0.1		W					
	Casing	-0.1		W					
	Jamb	-0.1		W					
	Door								
	Casing								
	Jamb								
	Window Trim	-0.1							
	Sill	-0.1							
	Sash	-0.2							
	~~Well~~								
	Cabinet Base								
	Door Exterior								
	Door Interior								
	Walls								
	Shelves								
	Shelf Supports								
	Closet Shelf	-0.1		W					
	Shelf Supports	0.1		W					
	Radiator	0.3		M					
	Wall Molding								
	~~Ceiling~~								
A	Wall	0.1		SR					
B	Wall	0.1							
C	Wall	-0.2							
D	Wall	-0.1							
	Door	0.1		W					
	DT	0.1		W					
	~~DT~~	-0.1		W					

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XRF FIELD DATA SHEET – INTERIOR ROOM

Address: 453 Willow ST **Apt. #:** _____

Floor: 3RD **Room:** Bath **Page** ____ **of** ____

Project Name: _____ **Project Number:** _____

Project Manager: K. McCarthy **(If Positive - Check All That Apply)** * Substrate Type: Metal = M, Wood = W, Plaster = P, Sheetrock = S, Concrete = C, Brick = B, N/A = Not Accessible; N/C = Not Coated; COV = Covered; VR = Vinyl Replacement

Side	Surface	XRF Readings	POS	Substrate	Defective	Chewable	Friction	Impact	Comments
	Floor	-0.5		Ceramic					
	Baseboards	0.3		W					
A	Wall	>9.9	✓	~~NO~~ SR	NO				
B	Wall	>9.9	✓	~~NO~~ SR	NO				
C	Wall	>9.9	✓	~~NO~~ SR	NO				
D	Wall	>9.9	✓	~~NO~~ SR	NO				
	Chair rail								
	Ceiling	>9.9	✓	~~NO~~ SR	NO				
	Crown Molding								
	Door	4.9	✓	W	NO				
	Casing	3.6	✓	W	NO				
	Jamb	2.8	✓	W	NO				
	Door								
	Casing								
	Jamb								
	Window Trim	4.7	✓	~~NO~~ W	N				
	Sill	1.1	✓	~~NO~~ W	N				
	Sash	5.6	✓	~~YES~~ W	Y				
	Well								
	Cabinet Base								
	Door Exterior								
	Door Interior								
	Walls								
	Shelves								
	Shelf Supports								
	Closet Shelf								
	Shelf Supports								
	Radiator	2.5	✓	m	NO				
A	Wall Molding	4.2	✓	W	NO				
	TUB	>9.9	✓	m	NO				
	ceiling Trim	4.6	✓	W	NO				

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XRF FIELD DATA SHEET – INTERIOR ROOM

Address: _____ **Apt. #:** _____

Floor: 2nD **Room:** closet (corridor) **Page** ____ **of** ____

Project Name: _____ **Project Number:** _____

Project Manager: K. McCarthy **(If Positive - Check All That Apply)** * Substrate Type: Metal = M, Wood = W, Plaster = P, Sheetrock = S, Concrete = C, Brick = B, N/A = Not Accessible; N/C = Not Coated; COV = Covered; VR = Vinyl Replacement

Side	Surface	XRF Readings	POS	Substrate	Defective	Chewable	Friction	Impact	Comments
	Floor								
	Baseboards	0.0		W					
A	Wall	6.5	✓	SR	N				
B	Wall	-0.4		SR					
C	Wall	-0.1		SR					
D	Wall	6.4	✓	SR	N				
	Chair rail								
	Ceiling	-0.1		SR					
	Crown Molding								
	Door								
	Casing								
	Jamb								
	Door								
	Casing								
	Jamb								
	Window Trim								
	Sill								
	Sash								
	Well								
	Cabinet Base								
	Door Exterior								
	Door Interior								
	Walls								
	Shelves								
	Shelf Supports								
	Closet Shelf	-0.1		W					
	Shelf Supports	-0.1		W					
	Radiator								
	Wall Molding								
	Bench	0.0		W					

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XRF FIELD DATA SHEET – INTERIOR ROOM

Address: 452 Willow **Apt. #:** _____

Floor: 2nd **Room:** Corridor **Page** ____ **of** ____

Project Name: _____ **Project Number:** _____

Project Manager: K. McCarthy **(If Positive - Check All That Apply)** * Substrate Type: Metal = M, Wood = W, Plaster = P, Sheetrock = S, Concrete = C, Brick = B, N/A = Not Accessible; N/C = Not Coated; COV = Covered; VR = Vinyl Replacement

Side	Surface	XRF Readings	POS	Substrate	Defective	Chewable	Friction	Impact	Comments
	Floor	0.0		W					
	Baseboards	>9.9		W	Y				
A	Wall	-0.3		P					
B	Wall	-0.2		P					
C	Wall	-0.2		P					
D	Wall	-0.1		P					
	Chair rail	[illegible]							
	Ceiling	-0.3		W					
	Crown Molding	0.3		W					
	Door	0.2		W					
	Casing	>9.9	✓	W	Y				
	Jamb	>9.9	✓	W	Y				
	Door								
	Casing								
	Jamb								
	Window Trim								
	Sill								
	Sash								
	Well								
	Cabinet Base								
	Door Exterior								
	Door Interior								
	Walls								
	Shelves								
	Shelf Supports								
	Closet Shelf								
	Shelf Supports								
	Radiator	0.2		m					
	Wall Molding								
B	Radiator Cap	-0.3		m					

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XRF FIELD DATA SHEET – INTERIOR ROOM

Address: 452 Willow Street, Waterbury, CT **Apt. #:**

Floor: gnd **Room:** Rm 5 **Page** 6 **of** 14

Project Name: 425 Willow Street **Project Number:** 20140277A9E

Project Manager: K. McCarthy (If Positive - Check All That Apply)

Side	Surface	XRF Readings	POS	Substrate	Defective	Chewable	Friction	Impact	Comments
	Floor	>9.9		W					
	Baseboards								
A	Wall	>9.9	✓	W	N				wipes cont
B	Wall	>9.9	✓	W	Y				
C	Wall	>9.9	✓	W	N				
D	Wall	>9.9	✓	W	N				
	Chair rail								
	Ceiling	>9.9	✓	W	N				
	Crown Molding								
	Door								
	Casing								
	Jamb								
	Door								
	Casing								
	Jamb								
	Window Trim	>9.9	✓	W	N				
	Sill	>9.9	✓	W	N				
	Sash	>9.9	✓	W	N				
	Well	>9.9	✓	W	Y				
	Cabinet Base								
	Door Exterior								
	Door Interior								
	Walls								
	Shelves								
	Shelf Supports								
	Closet Shelf								
	Shelf Supports								
	Radiator								
	Wall Molding								

* Substrate Type: Metal = M, Wood = W, Plaster = P, Sheetrock = S, Concrete = C, Brick = B
N/A = Not Accessible; N/C = Not Coated; COV = Covered; VR = Vinyl Replacement

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XRF FIELD DATA SHEET – INTERIOR ROOM

Address: 452 Willow Street, Waterbury, CT **Apt. #:**

Floor: 2nd Floor **Room:** Bath **Page** 7 **of** 14

Project Name: 425 Willow Street **Project Number:** 20140277A9E

Project Manager: K. McCarthy **(If Positive - Check All That Apply)**

Side	Surface	XRF Readings	POS	Substrate	Defective	Chewable	Friction	Impact	Comments
	Floor								
	Baseboards								
A	Wall	0.2		PL					
B	Wall	0.1		PL					
C	Wall	0.1		PL					
D	Wall	-0.0		PL					
	Chair rail								
	Ceiling	0.0		PL					
	Crown Molding								
	Door	7.6		W	NO				
	Casing	79.9		W	NO				
	Jamb	79.9		W	NO				
	Door								
	Casing								
	Jamb								
	Window Trim	79.9	/	W	NO				
	Sill	79.9	/	W	NO				
	Sash	79.9	/	W	NO				
	Well								
	Cabinet Base								SPIRALWELL ~~OPEN~~ W
	Door Exterior								RISER 0.0 ↓
	Door Interior								TREAD 0.1 ↓
	Walls								RISER 0.1 ↓
	Shelves								BASEBOARD 0.0 W
	Shelf Supports								
	Closet Shelf								
	Shelf Supports								
	Radiator								
	Wall Molding								

* Substrate Type: Metal = M, Wood = W, Plaster = P, Sheetrock = S, Concrete = C, Brick = B
N/A = Not Accessible; N/C = Not Coated; COV = Covered; VR = Vinyl Replacement

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XRF FIELD DATA SHEET – INTERIOR ROOM

Address: 452 Willow Street, Waterbury, CT **Apt. #:**

Floor: 1st **Room:** LVR 1 **Page** 8 **of** 14

Project Name: 425 Willow Street **Project Number:** 20140277A9E

Project Manager: K. McCarthy (If Positive - Check All That Apply)

Side	Surface	XRF Readings	POS	Substrate	Defective	Chewable	Friction	Impact	Comments
	Floor								
	Baseboards	0.3			W				
A	Wall	-0.1			RL				
B	Wall	0.0			PL				
C	Wall	0.1			SR				
D	Wall	0.1			PL				
	Chair rail								
	Ceiling	0.2			SR				
	Crown Molding	0.1			W				
	Door	-0.2		W					
	Casing	-0.1		W					
	Jamb	-0.2		W					
	Door								
	Casing								
	Jamb								
	Window Trim	0.4		W					
	Sill	4.1	✓	W	NO				
	Sash	0.1		W					
	Well								CLOSET
	Cabinet Base	0.1		W					TRIM 6.7 ✓ W NO
	Door Exterior	-0.0		W					A WALL 0.5 SR
	Door Interior	-0.0		W					B -0.4
	Walls	0.1		W					C 0.0
	Shelves								D -0.8
	Shelf Supports								
	Closet Shelf	-0.2		W					
	Shelf Supports	-0.1		W					
	Radiator	-0.2		M					
	~~Wall Molding~~ Cap	0.1		M					

* Substrate Type: Metal = M, Wood = W, Plaster = P, Sheetrock = S, Concrete = C, Brick = B
N/A = Not Accessible; N/C = Not Coated; COV = Covered; VR = Vinyl Replacement

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XRF FIELD DATA SHEET – INTERIOR ROOM

Address: 452 Willow Street, Waterbury, CT **Apt. #:**

Floor: LWR 2 **Room:** **Page** 9 **of** 14

Project Name: 425 Willow Street **Project Number:** 20140277A9E

Project Manager: K. McCarthy (If Positive - Check All That Apply)

Side	Surface	XRF Readings	POS	Substrate	Defective	Chewable	Friction	Impact	Comments
	Floor								
	Baseboards								
A	Wall	0.0		SR					
B	Wall	0.2		SR					
C	Wall	0.0		PL					
D	Wall	0.1		SR					
	Chair rail								
	Ceiling	0.0		SR					
	Crown Molding								
	Door								
	Casing								
	Jamb								
	Door	0.1		W					
	Casing	0.2		W					
	Jamb	0.1		W					
	Window Trim	0.0		W					
	Sill	0.3		W.					
	Sash	0.1		W					
	Well								
	Cabinet Base								
	Door Exterior								
	Door Interior								
	Walls								
	Shelves								
	Shelf Supports								
	Closet Shelf								
	Shelf Supports								
	Radiator	0.7		M					
	Wall Molding								

* Substrate Type: Metal = M, Wood = W, Plaster = P, Sheetrock = S, Concrete = C, Brick = B
N/A = Not Accessible; N/C = Not Coated; COV = Covered; VR = Vinyl Replacement

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XRF FIELD DATA SHEET – INTERIOR ROOM

Address: 452 Willow Street, Waterbury, CT **Apt. #:**

Floor: 1st **Room:** Kitchen **Page** 10 **of** 14

Project Name: 425 Willow Street **Project Number:** 20140277A9E

Project Manager: K. McCarthy (If Positive - Check All That Apply)

Side	Surface	XRF Readings	POS	Substrate	Defective	Chewable	Friction	Impact	Comments
	Floor								
	Baseboards								
A	Wall	0.2		SR					
B	Wall	0.0		SR					
C	Wall	0.1		SR					
D	Wall	0.1		SR					
	Chair rail								
	Ceiling	0.2		SR					
	Crown Molding								
	Door								
	Casing								
	Jamb								
	Door								
	Casing	0.2		W					
	Jamb								
	Window Trim	0.1		W					
	Sill	0.4		W					
	Sash	0.0		W					
	Well								
	Cabinet Base								
	Door Exterior								
	Door Interior								
	Walls								
	Shelves								
	Shelf Supports								
	Closet Shelf								
	Shelf Supports								
	Radiator								
	Wall Molding								

* Substrate Type: Metal = M, Wood = W, Plaster = P, Sheetrock = S, Concrete = C, Brick = B
N/A = Not Accessible; N/C = Not Coated; COV = Covered; VR = Vinyl Replacement

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XRF FIELD DATA SHEET – INTERIOR ROOM

Address: 452 Willow St, Waterbury, CT **Apt. #:** _____

Floor: 1st **Room:** Back Porch **Page** ____ **of** ____

Project Name: 452 Willow St **Project Number:** 20140277.A9E

Project Manager: McCarthy **(If Positive - Check All That Apply)**

Side	Surface	XRF Readings	POS	Substrate	Defective	Chewable	Friction	Impact	Comments
	Floor								
	Baseboards								
A	Wall	>9.9	/	W	ND				
B	Wall	>9.9	/	W	ND				
C	Wall	>9.9	/	W	ND				
D	Wall	>9.9	/	W	ND				
	Chair rail								
	Ceiling	>9.9	/	W	ND				
	Crown Molding								
	Door	>9.9	/	W	ND				
	Casing	>9.9	/	W	ND				
	Jamb	>9.9	/	W	ND				
	Door								
	Casing								
	Jamb								
	Window Trim								
	Sill								
	Sash								
	Well								
	Cabinet Base								
	Door Exterior								
	Door Interior								
	Walls								
	Shelves								
	Shelf Supports								
	Closet Shelf								
	Shelf Supports								
	Radiator								
	Wall Molding								

* Substrate Type: Metal = M, Wood = W, Plaster = P, Sheetrock = S, Concrete = C, Brick = B
N/A = Not Accessible; N/C = Not Coated; COV = Covered; VR = Vinyl Replacement

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XRF FIELD DATA SHEET – INTERIOR ROOM

Address: 452 Willow St, Waterbury, CT **Apt. #:** _____

Floor: 1ST **Room:** Rm 6 **Page** ____ **of** ____

Project Name: 452 Willow St **Project Number:** 20140277.A9E

Project Manager: McCarthy **(If Positive - Check All That Apply)**

Side	Surface	XRF Readings	POS	Substrate	Defective	Chewable	Friction	Impact	Comments
	Floor								
	Baseboards	0.2		W					
A	Wall	0.1		SR					
B	Wall	0.1		SR					
C	Wall	0.1		SR					
D	Wall	0.1		SR					
	Chair rail								
	Ceiling	0.2		SR					
	Crown Molding	-0.0		W					
	Door	7.6	✓	W	N				
	Casing	7.0	✓	W	N				
	Jamb	6.7	✓	W	N				
	Door								
	Casing								
	Jamb								
C	Window Trim	7.9	✓	W	N				
	Sill	0.4							
	Sash	7.6	✓	W	N				
	Well								
	Cabinet Base								
	Door Exterior								
	Door Interior								
	Walls								
	Shelves								
	Shelf Supports								
	Closet Shelf								
	Shelf Supports								
	Radiator								
	Wall Molding								

* Substrate Type: Metal = M, Wood = W, Plaster = P, Sheetrock = S, Concrete = C, Brick = B
N/A = Not Accessible; N/C = Not Coated; COV = Covered; VR = Vinyl Replacement

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XRF FIELD DATA SHEET – INTERIOR ROOM

Address: 452 Willow St, Waterbury, CT **Apt. #:** _____

Floor: 1st **Room:** Rm 7 **Page** ____ **of** ____

Project Name: 452 Willow St **Project Number:** 20140277.A9E

Project Manager: McCarthy **(If Positive - Check All That Apply)**

Side	Surface	XRF Readings	POS	Substrate	Defective	Chewable	Friction	Impact	Comments
	Floor								
	Baseboards								
A *	Wall	>9.9	✓	PL	N				
B	Wall	>9.9	✓	PL	N				
C	Wall	>9.9	✓	PL	N				
D	Wall	>9.9	✓	PL	N				
	Chair rail								
	Ceiling								
	Crown Molding								
	Door								
	Casing	2.6	✓	W	No				
	Jamb	1.2	✓	W	NO				
	Door								
	Casing								
	Jamb								
	Window Trim								
	Sill								
	Sash								
	Well								
	Cabinet Base								
	Door Exterior								
	Door Interior								
	Walls								
	Shelves								
	Shelf Supports								
	Closet Shelf								
	Shelf Supports								
	Radiator	6.7		M	Y				
	Wall Molding								

* Substrate Type: Metal = M, Wood = W, Plaster = P, Sheetrock = S, Concrete = C, Brick = B
N/A = Not Accessible; N/C = Not Coated; COV = Covered; VR = Vinyl Replacement

Notes: _____

FUSS & O'NEILL
EnviroScience, LLC

www.fando.com

146 Hartford Road, Manchester, CT 06040

(860) 646-2469 Fax (860) 649-6883

XRF FIELD DATA SHEET – EXTERIOR OF SIDE A

Address: 452 Willow St. Waterbury, CT

Page 11 **of** 14

Project Name: 452 Willow St.

Project Number: 20140277.A9E

Project Manager: McCarthy

(If Positive - Check All That Apply)

Side	Surface	XRF Readings	POS	Substrate	Defective	Chewable	Friction	Impact	Comments
	Foundation								
	Skirt Board								
	Corner Boards								
	Siding	0.6		W					
	Upper Trim								
	Door	79.9	✓	W	Yes				
	Casing	79.9	✓	W	Yes				
	Jamb								
	Threshold								
	Kick Board								
	Storm Door								
	Window Sill	79.9	✓	W	Yes				
	Trim	79.9	✓	↓	Yes				
	Sash	79.9	✓	↓	Yes				
	Blind Stops								
	Storm Window								
	Basement Sash								
	Frame								
	Bulkhead								
	Downspouts								
	Porch Floor	0.3							
	Ceiling Joist								
	Lower Trim	79.9	✓	W	NO				
	Lower Railing								
	~~Balusters~~ Column	0.6	✓	W	NO				
	Railing Cap	0.2		W					
	Ceiling								
	Lattice	79.9	✓	W	NO				
	Lattice Frame								
	Support Columns	-0.1		Brick					
	Column Base								
	Brackets								
	Hand Rails								
	Treads								
	Risers								
	Stringers								

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XRF FIELD DATA SHEET – EXTERIOR OF SIDE B

Address: 452 Willow St
Page 12 of 14
Project Name:
Project Number: 20140277.AGF
Project Manager: McCarthy

(If Positive - Check All That Apply)

Side	Surface	XRF Readings	POS	Substrate	Defective	Chewable	Friction	Impact	Comments
	Foundation								
	Skirt Board								
	Corner Boards								
	Siding	0.4		W					
	Upper Trim								
	Door	79.9		W	yes				
	Casing	79.9		W	yes				
	Jamb	79.9		W	yes				
	Threshold								
	Kick Board								
	Storm Door								
	Window Sill	79.9		W	yes				
	Trim	79.9		W	yes				
	Sash	79.9		W	yes				
	Blind Stops								
	Storm Window								
	Basement Sash								
	Frame								
	Bulkhead								
	Downspouts								
	Porch Floor								
	Ceiling Joist								
	Lower Trim								
	Lower Railing								
	Balusters								
	Railing Cap								
	Ceiling								
	Lattice								
	Lattice Frame								
	Support Columns								
	Column Base								
	Brackets								
	Hand Rails								
	Treads								
	Risers								
	Stringers								

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(860) 646-2469 Fax (860) 649-6883

XRF FIELD DATA SHEET – EXTERIOR OF SIDE C

Address: 452 willow ST.
Page 13 **of** 14
Project Name:
Project Number: 20140277.A9E
Project Manager: McCarthy

(If Positive - Check All That Apply)

Side	Surface	XRF Readings	POS	Substrate	Defective	Chewable	Friction	Impact	Comments
	Foundation								
	Skirt Board								
	Corner Boards								
	Siding	0.5		W					
	Upper Trim								
	Door	79.9		W	YES				
	Casing	79.9		W	YES				
	Jamb	79.9		W	YES				
	Threshold								
	Kick Board								
	Storm Door								
	Window ~~Sill~~ storm	0.5		W					
	Trim	79.9		W	NO				
	Sash								
	Blind Stops								
	Storm Window								
	Basement Sash								
	Frame								
	Bulkhead								
	Downspouts								
	Porch Floor								
	Ceiling Joist								
	Lower Trim								
	Lower Railing								
	Balusters								
	Railing Cap								
	Ceiling								
	Lattice								
	Lattice Frame								
	Support Columns								
	Column Base								
	Brackets								
	Hand Rails								
	Treads								
	Risers								
	Stringers								
	SOFFIT	79.9		W	NO				

FUSS & O'NEILL
EnviroScience, LLC

Appendix E

Lead in Dust Wipe Sample Results and Chain of Custody Form

FUSS & O'NEILL
EnviroScience, LLC
146 Hartford Road, Manchester, CT 06040
www.fando.com
(860) 646-2469 Fax (860) 649-6883

20140691 2

SAMPLE LOG FOR LEAD WIPES

Sheet No. 1 of 1

Project Name: [illegible] Assoc.
Building: 452 [illegible] St. Waterbury, CT

Project Number: 20140277.A9E
Project Manager: KM

	Sample ID Number	Sample Location/Building	Surface Component	Surface Sq. Ft	Result (ug/ft)	Lab Number
1	050814UA-33	Room 1	Floor	144		
2	-34	Room 1 - B Window	W. Sill	36		
3	-35	Room 2	Floor	144		
4	-36	Room 2 W. Sill	W. Sill	36		
5	-37	Room # 4	Floor	144		
6	-38	Room 4 - B - Window	W. Sill	36		
7	-39	Room 4 - B - Window Dup	W. Sill	36		
8	-40	Room 6	Floor	144		
9	-41	Room 6 - C - Window	W. Sill	36		
10	-42	Blank	N/A	—		
11	-43	Blank	N/A	—		

Analysis Method: EPA-SW-846-3050(MOD.)
Wipe Media ☒ ASTM ☐ Non ASTM

Turnaround Time 24 hrs

Based on the turnaround time indicated above, analyses are due to Fuss & O'Neill EnviroScience on or before this date: 5/11/14
Please call the Fuss & O'Neill EnviroScience laboratory at 860-646-2469 if analyses will be late.

Fax Results To: Fuss & O'Neill EnviroScience Laboratory at 888-838-1160

Special Instructions:

Samples Collected By: [signature] Date: 5/8/14 Time: 1016
Samples Rec'd/Sent By: Date: Time:
Samples Received By: [signature] Date: 5/9/14 Time: 10:24am EMSL-EX

Shipped To: ☒ EMSL (State) NJ ☐ Other

Method of Shipment: ☒ Fed Ex. ☐ UPS Overnight ☐ UPS Ground ☐ Other

Q:\EnviroScience\Admin\FORMS\Lead\Lead Wipes_Sample Log rev 0611.doc

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 786-5974
http://www.EMSL.com cinnaminsonleadlab@emsl.com

EMSL Order:	201406912
CustomerID:	ENVI54
CustomerPO:	20140277.A9E
ProjectID:	

Attn: **Fuss & O'Neill EnviroScience, LLC**
146 Hartford Road
Manchester, CT 06040

Phone:	(860) 646-2469
Fax:	(888) 838-1160
Received:	05/09/14 10:24 AM
Collected:	5/8/2014

Project: **20140277.A9E / Lothrop Assoc. / 452 Willow Street Waterbury,CT**

Test Report: Lead in Dust by Flame AAS (SW 846 3050B/7000B)*

Client Sample Description	Lab ID	Collected	Analyzed	Area Sampled	Lead Concentration
050814UA-33	0001	5/8/2014	5/9/2014	144 in²	1400 µg/ft²
Site: Room 1 - Floor					
050814UA-34	0002	5/8/2014	5/9/2014	36 in²	7500 µg/ft²
Site: Room 1 - B, Window Sill					
050814UA-35	0003	5/8/2014	5/9/2014	144 in²	700 µg/ft²
Site: Room 2 - Floor					
050814UA-36	0004	5/8/2014	5/9/2014	36 in²	41000 µg/ft²
Site: Room 2, Window Sill					
050814UA-37	0005	5/8/2014	5/9/2014	144 in²	290 µg/ft²
Site: Room #4 - Floor					
050814UA-38	0006	5/8/2014	5/9/2014	36 in²	<40 µg/ft²
Site: Room 4 - B - Window Sill					
050814UA-39	0007	5/8/2014	5/9/2014	36 in²	280 µg/ft²
Site: Room 4 - B - Window Sill - Dup					
050814UA-40	0008	5/8/2014	5/9/2014	144 in²	440 µg/ft²
Site: Room 6 - Floor					
050814UA-41	0009	5/8/2014	5/9/2014	36 in²	1100 µg/ft²
Site: Room 6 - C - Window Sill					
050814UA-42	0010	5/8/2014	5/9/2014	n/a	<10 µg/wipe
Site: Blank					
050814UA-43	0011	5/8/2014	5/9/2014	n/a	<10 µg/wipe
Site: Blank					

Julie Smith - Laboratory Director
NJ-NELAP Accredited:03036
or other approved signatory

*Analysis following Lead in Dust by EMSL SOP/ Determination of Environmental Lead by FLAA. Reporting limit is 10 ug/wipe. ug/wipe = ug/ft2 x area sampled in ft2. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities (such as volume sampled) or analytical method limitations. Samples received in good condition unless otherwise noted. The lab is not responsible for data reported in µg/ft² which is dependant on the area provided by non-lab personnel. The test results contained within this report meet the requirements of NELAC unless otherwise noted. "<" (less than) results signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NELAP Certifications: NJ 03036, NY 10872, PA 68-00367, AIHA-LAP, LLC ELLAP 100194, A2LA 2845.01

Initial report from 05/10/2014 13:16:11

FUSS & O'NEILL
EnviroScience, LLC

Appendix F

Lead in Soil Sample Results and Chain of Custody Form

FUSS & O'NEILL
EnviroScience, LLC

www.fando.com

146 [illegible] Road, Manchester, CT 06040

(860) 646-2469 Fax (860) 649-6883

20140 6896

SAMPLE LOG FOR LEAD SOIL

Sheet No. 1 of 1

Project Name: Lothrop Assoc

Building: 452 Willow St. Waterbury, CT

Project Number: 20140277 . A9E

Project Manager: [illegible]

	Sample ID Number	Sample Location/Building	Soil Condition	Result (%)	Lab Number
1-	0508 [illegible] -44	B-Side @ dripline	Bare		
2-	d -45	D-Side @ dripline	d		

Analysis Method: EPA-SW-846-3050-7420

Turnaround Time 2 hrs

Date: Time:

Date: Time:

Based on the turnaround time indicated above, analyses are due to Fuss & O'Neill EnviroScience on or before this date: 5/9/14

Please call the Fuss & O'Neill EnviroScience laboratory at 860-646-2469 if analyses will be late.

Fax Results To: Fuss & O'Neill EnviroScience Laboratory at 888-838-1160

Special Instructions:

Samples Collected By: [illegible] Date: 5/8/14 Time: 1030

Samples Rec'd/Sent By: Date: Time:

Samples Received By: [illegible] Date: 5/9/14 Time: 10:24 am EMSL-FX

Shipped To: ☒ EMSL (State) NJ ☐ Other

Method of Shipment: ☒ Fed Ex. ☐ UPS Overnight ☐ UPS Ground ☐ Other

(SEE REVERSE FOR DIAGRAM)

Science\Admin\FORMS\Lead\Lead Soil_Sample Log rev 0611.doc

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 786-5974
http://www.EMSL.com cinnaminsonleadlab@emsl.com

EMSL Order:	201406896
CustomerID:	ENVI54
CustomerPO:	20140277.A9E
ProjectID:	

Attn: **Fuss & O'Neill EnviroScience, LLC**
146 Hartford Road
Manchester, CT 06040

Phone:	(860) 646-2469
Fax:	(888) 838-1160
Received:	05/09/14 10:24 AM
Collected:	5/8/2014

Project: **20140277.A9E / Lothop Assoc. / 452 Willow Street Waterbury,CY**

Test Report: Lead in Soils by Flame AAS (SW 846 3050B/7000B)*

Client Sample Description	*Lab ID*	*Collected*	*Analyzed*	*Lead Concentration*
050814UA-44	*0001*	5/8/2014	5/9/2014	1800 mg/Kg
	Site: B-Side @ Dripline Desc: Bare			
050814UA-45	*0002*	5/8/2014	5/9/2014	940 mg/Kg
	Site: D-Side @ Dripline Desc: Bare			

Julie Smith - Laboratory Director
NJ-NELAP Accredited:03036
or other approved signatory

*Analysis following Lead in Soil/Solids by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 40 mg/kg based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. Results reported based on dry weight. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NELAP Certifications: NJ 03036, NY 10872, PA 68-00367, AIHA-LAP, LLC ELLAP 100194, A2LA 2845.01

Initial report from 05/12/2014 08:09:01

FUSS & O'NEILL
EnviroScience, LLC

Appendix G

Mold Bulk Sample Results and Chain of Custody Form

OrderID: 371404543

Chain of Custody

Environmental Microbiology Lab Services

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ, 08077

Phone: (856) 858-4800
Fax: (856) 858-4960
(856) 427-1608
http://www.emsl.com

Please print all information legibly.

Company:	Fuss & O'Neill EnviroScience, LLC	Bill To:	Fuss & O'Neill EnviroScience, LLC
Address1:	56 Quarry Road	Address1:	56 Quarry Road
Address2:		Address2:	
[illegible]	Trumbull, CT	City, State:	Trumbull, CT
[illegible]	06611	Zip/Post Code:	06611
[illegible]	USA	Country:	USA
[illegible]	Kevin McCarthy	Attn:	Kevin McCarthy
[illegible]	203-374-3748x 3533	Phone:	203-374-3748x3533
Fax:	888-838-1160	Fax:	888-838-1160
Email:	kmccarthy@fando.com	Email:	kmccarthy@fando.com
[illegible]	Ellen Podell	P.O. Number:	
[illegible]	452 Willow Street/20140277.A9E		

Project Name 452 Willow Street Date Collected 4-01-14 Date Sent 4-2-14

Other Information: Bulk Mold Sample

For EMSL use only
EMSL Order No. 371404543
Sample(s) received in good condition? [Y] [N]
Discernable field blank submitted? [Y] [N]

Sample ID	Sample Location	Sample Type	Volume (liters), Area (sq. cm), or Weight (grams)	Analysis Code*	Turn-around Time*	Serial Number
0401BH01	Rear Porch	Bulk	12 grams	M041	24 hr	N/A

RECEIVED EMSL CINNAMINSON, N.J. 2014 APR -7 A 10:13

10pm

Relinquished by: B. Holdrinks Date: 4-2 Time: PM
Received by: [illegible] Date: 4/7/14 Time: 900

Page: 1 of 1

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-0262
http://www.EMSL.com / cinnmicrolab@emsl.com

Order ID:	371404543
Customer ID:	ENVI54
Customer PO:	
Project ID:	

Attn:	Kevin McCarthy Fuss & O'Neill EnviroScience, LLC 146 Hartford Road Manchester, CT 06040	Phone: Fax: Collected: Received: Analyzed:	(860) 646-2469 (888) 838-1160 04/01/2014 04/07/2014 04/07/2014
Proj:	452 Willow Street / 20140277.A9E		

Test Report: Microscopic Examination of Fungal Spores, Fungal Structures, Hyphae, and Other Particulates from Bulk Samples (EMSL Method: M041)

Lab Sample Number: Client Sample ID: Sample Location:	371404543-0001 0401BH01 Rear Porch				
Spore Types	**Category**				
Agrocybe/Coprinus	-				
[illegible]	-				
Ascospores	-				
[illegible]	-				
Basidiospores	-				
[illegible]	-				
Chaetomium	*Low*				
[illegible]	-				
Curvularia	-				
[illegible]	-				
Fusarium	-				
[illegible]	-				
Myxomycetes++	-				
[illegible]	-				
Rust	-				
[illegible]	-				
Stachybotrys	*High*				
[illegible]	-				
Ulocladium	-				
[illegible]	-				
Zygomycetes	-				
[illegible]	*High*				
Aspergillus	*High*				
[illegible]	-				
Hyphal Fragment	-				
[illegible]	-				
Pollen	-				

Category: Count/per area analyzed
Rare: 1 to 10 Low: 11 to 100 Medium: 101 to 1000 High: >1000

Bipolaris++ = Bipolaris/Dreschlera/Exserohilum Myxomycetes++ = Myxomycetes/Periconia/Smut
* = Sample contains fruiting structures and/or hyphae associated with the spores.

No discernable field blank was submitted with this group of samples.

Farbod Nekouei, M.S., Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation of the data contained in this report is the responsibility of the client. "-" denotes not detected. Samples received in good condition unless otherwise noted.
Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ AIHA-LAP, LLC–EMLAP Accredited #100194

Initial report from: 04/07/2014 15:55:58

For information on the fungi listed in this report please visit the Resources section at www.emsl.com

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EnviroScience, LLC

Appendix H

Airborne Radon Gas Assessment Results and Chain of Custody Form

FUSS & O'NEILL
EnviroScience, LLC

Appendix H

Airborne Radon Assessment Results and Chain of Custody

FUSS & O'NEILL
EnviroScience, LLC

(1)

4/4/14
ENVIII
DE

Radon Testing Summary Sheet

~~Housing District: Housing Authority of Waterbury~~

Project #: 20140277.B1E

Building: 452 ~~633~~ Willow Street

Address: 452 ~~633~~ Willow Street
Waterbury, CT 06710-

Placed by: B. Hobbins

Retrieved by: Tom Cruess

Start Date: 4-1-14

Stop Date: 4-3-14

Weather at Placement: Sunny, 45°

Contact/Phone #: Kevin McCarthy/203-374-3748 x3533 email results to kmccarthy@fando.com

Instructions: Tear off center bar coded label from canister and affix to sheet in spaces provided. Please make sure top bar coded label is left on detector. Identify test location for each detector ...ce provided for that detector (room #, loca... ...itional sheets as ...rk clearly if any detector is ...ieval.

REMOVE THIS PORTION AND AFFIX TO TEST INFORMATION FORM
2299541
REMOVE THIS PORTION AND KEEP FOR YOUR RECORDS
2299541
LVR 1

Start Time: 1520
Stop Time: 1525
Identifier:
LVR 1

REMOVE THIS PORTION AND AFFIX TO TEST INFORMATION FORM
2299429
REMOVE THIS PORTION AND KEEP FOR YOUR RECORDS
2299429
LVR 1-D
Client

Start Time: 1520
Stop Time: 1525
Identifier:
LVR 1-D

REMOVE THIS PORTION AND AFFIX TO TEST INFORMATION FORM
2299434
REMOVE THIS PORTION AND KEEP FOR YOUR RECORDS
2299434
Client
RADON TESTING CORP. OF AMERICA

Start Time: 15:22
Stop Time: 1527
Identifier:
Basement

REMOVE THIS PORTION AND AFFIX TO TEST INFORMATION FORM
2299373
REMOVE THIS PORTION AND KEEP FOR YOUR RECORDS
2299373
Client
RADON TESTING CORP. OF AMERICA

Start Time:
Stop Time:
Identifier:
Basement-B

Start Time:
Stop Time:
Identifier:

Start Time:
Stop Time:
Identifier:

Start Time:
Stop Time:
Identifier:

Start Time:
Stop Time:
Identifier:

Start Time:
Stop Time:
Identifier:

Start Time:
Stop Time:
Identifier:

Start Time:
Stop Time:
Identifier:

56 Quarry Road, Trumbull, CT 06611
t (203) 374-3748
f (203) 374-4391
www.FandO.com

Connecticut
Massachusetts
New York
Rhode Island
South Carolina

PC1404040102

RTCA RADON TESTING CORPORATION OF AMERICA

Site Radon Inspection Report

Date : 4/8/2014

Ms. Karron Redfield
Fuss & O'Neill Enviroscience, LLC
146 Hartford Road
Manchester, CT 06040-

Client: Project # 20140277.B1E
Test Location 452 Willow Street
Waterbury, CT 06710-

Individual Canister Results

Canister ID# : 2299373
Canister Type : Charcoal Canister 3 inch
Location : Basement - B
Radon Level : **0.3 pCi/L**
Error for Measurement is: ± 0.2 pCi/L

Test Start : 04/01/2014 @ 15:22
Test Stop : 04/03/2014 @ 15:27
Received: 04/04/2014 @ 11:52
Analyzed: 04/04/2014 @ 14:08

Canister ID# : 2299429
Canister Type : Charcoal Canister 3 inch
Location : LVR 1 - D
Radon Level : **0.6 pCi/L**
Error for Measurement is: ± 0.2 pCi/L

Test Start : 04/01/2014 @ 15:20
Test Stop : 04/03/2014 @ 15:25
Received: 04/04/2014 @ 11:52
Analyzed: 04/04/2014 @ 14:08

Canister ID# : 2299434
Canister Type : Charcoal Canister 3 inch
Location : Basement
Radon Level : **2.6 pCi/L**
Error for Measurement is: ± 0.2 pCi/L

Test Start : 04/01/2014 @ 15:22
Test Stop : 04/03/2014 @ 15:27
Received: 04/04/2014 @ 11:52
Analyzed: 04/04/2014 @ 14:08

Canister ID# : 2299541
Canister Type : Charcoal Canister 3 inch
Location : LVR 1
Radon Level : **0.5 pCi/L**
Error for Measurement is: ± 0.2 pCi/L

Test Start : 04/01/2014 @ 15:20
Test Stop : 04/03/2014 @ 15:25
Received: 04/04/2014 @ 11:52
Analyzed: 04/04/2014 @ 14:08

NRSB

Andreas C. George
Radon Measurement Specialist
NJ MES 11089

Dante Galan
Laboratory Director

NRSB ARL0001
NYS ELAP ID: 10806
PADEP ID: 0346
NJDEP ID: NY933
NJ MEB 90036
FL DOH RB1609

(914)345-3380
FAX (914)345-8546

2 Hayes Street, Elmsford, NY 10523
www.rtca.com

RTCA RADON TESTING CORPORATION OF AMERICA

PC1404040102

Site Radon Inspection Report

Date : 4/8/2014

The reported results indicate that radon levels in the building tested are below the United States Environmental Protection Agency (EPA) action level of 4.0 picoCuries per liter of air (pCi/L). The EPA recommends retesting if your living patterns change and you begin occupying a lower level of the building, such as a basement or if major remodeling is done.

General radon information may be obtained by consulting the EPA booklet: A Citizen's Guide to Radon (www.epa.gov/radon/pubs/ditguide.html). To request a copy or for further information, please contact your state health department. The EPA maintains a radon information website, including copies of its publications, at www.epa.gov/iaq/radon.

For New Jersey clients: Please see the attached guidance document entitled Radon Testing and Mitigation: The Basics for further information.

For New York clients: If the radon level of one or more testing devices is equal to or exceeds 20 pCi/L please contact the New York State Department of Health, Bureau of Environmental Radiation Protection, for technical advice and assistance at 518-402-7556 or toll free1-800-458-1158.

PLEDGE OF ASSURED QUALITY

All procedures used for generating this report are in complete accordance with the current EPA protocols for the analysis of radon in air (EPA 402-R-92-004). The analytical results relate only to the samples tested, in the condition received by the lab, and that calculations were based upon the information supplied by client. RTCA and its personnel do not assume responsibility or liability, collectively and individually, for analysis results when detectors have been improperly handled or placed by the consumer, nor does RTCA and its personnel accept responsibility for any financial or health consequences of subsequent action or lack of action, taken by the customer or it's consultants based on RTCA-provided results.

NRSB

Andreas C. George
Radon Measurement Specialist
NJ MES 11089

Dante Galan
Laboratory Director

NRSB ARL0001
NYS ELAP ID: 10806
PADEP ID: 0346
NJDEP ID: NY933
NJ MEB 90036
FL DOH RB1609

(914)345-3380
FAX (914)345-8546

2 Hayes Street, Elmsford, NY 10523
www.rtca.com

FUSS & O'NEILL
EnviroScience, LLC

Appendix I

Site Photographs

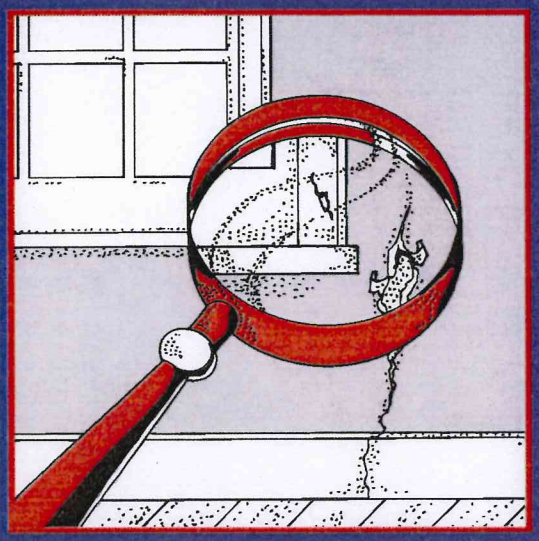
Basement Asbestos-Containing Mudded Pipe Fitting Insulation

2nd Floor LBP-Coated Wainscot

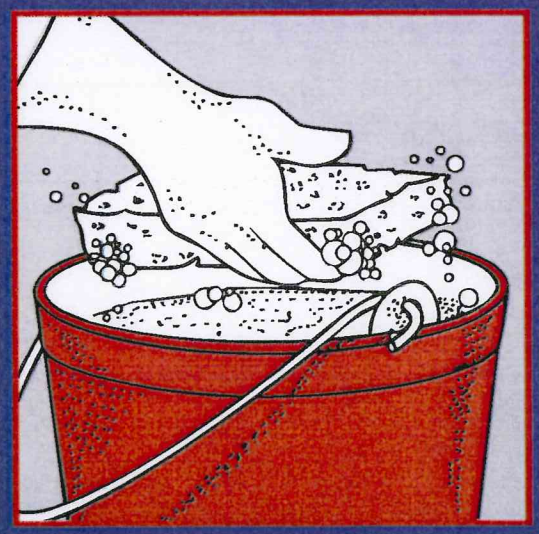
Basement Asbestos-Containing Pipe Insulation

LBP-Coated Wood Trim Pile (Loose)

Basement Asbestos-Containing Pipe and Fitting Insulations



Protect Your Family From Lead In Your Home



EPA United States Environmental Protection Agency

United States Consumer Product Safety Commission

United States Department of Housing and Urban Development

Simple Steps To Protect Your Family From Lead Hazards

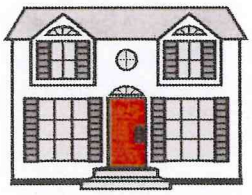
If you think your home has high levels of lead:

- Get your young children tested for lead, even if they seem healthy.
- Wash children's hands, bottles, pacifiers, and toys often.
- Make sure children eat healthy, low-fat foods.
- Get your home checked for lead hazards.
- Regularly clean floors, window sills, and other surfaces.
- Wipe soil off shoes before entering house.
- Talk to your landlord about fixing surfaces with peeling or chipping paint.
- Take precautions to avoid exposure to lead dust when remodeling or renovating (call 1-800-424-LEAD for guidelines).
- Don't use a belt-sander, propane torch, high temperature heat gun, scraper, or sandpaper on painted surfaces that may contain lead.
- Don't try to remove lead-based paint yourself.

Recycled/Recyclable
Printed with vegetable oil based inks on recycled paper (minimum 50% postconsumer) process chlorine free.

Are You Planning To Buy, Rent, or Renovate a Home Built Before 1978?

Many houses and apartments built before 1978 have paint that contains high levels of lead (called lead-based paint). Lead from paint, chips, and dust can pose serious health hazards if not taken care of properly.

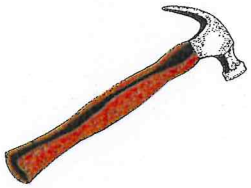


OWNERS, BUYERS, and RENTERS are encouraged to check for lead (see page 6) before renting, buying or renovating pre-1978 housing.

Federal law requires that individuals receive certain information before renting, buying, or renovating pre-1978 housing:

LANDLORDS have to disclose known information on lead-based paint and lead-based paint hazards before leases take effect. Leases must include a disclosure about lead-based paint.

SELLERS have to disclose known information on lead-based paint and lead-based paint hazards before selling a house. Sales contracts must include a disclosure about lead-based paint. Buyers have up to 10 days to check for lead.



RENOVATORS disturbing more than 2 square feet of painted surfaces have to give you this pamphlet before starting work.

IMPORTANT!

Lead From Paint, Dust, and Soil Can Be Dangerous If Not Managed Properly

FACT: Lead exposure can harm young children and babies even before they are born.

FACT: Even children who seem healthy can have high levels of lead in their bodies.

FACT: People can get lead in their bodies by breathing or swallowing lead dust, or by eating soil or paint chips containing lead.

FACT: People have many options for reducing lead hazards. In most cases, lead-based paint that is in good condition is not a hazard.

FACT: Removing lead-based paint improperly can increase the danger to your family.

If you think your home might have lead hazards, read this pamphlet to learn some simple steps to protect your family.

Lead Gets in the Body in Many Ways

Childhood lead poisoning remains a major environmental health problem in the U.S.

Even children who appear healthy can have dangerous levels of lead in their bodies.

People can get lead in their body if they:

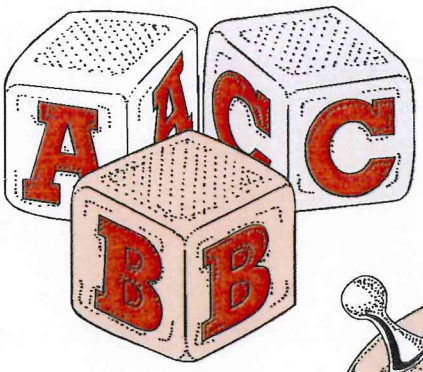
- Breathe in lead dust (especially during renovations that disturb painted surfaces).
- Put their hands or other objects covered with lead dust in their mouths.
- Eat paint chips or soil that contains lead.

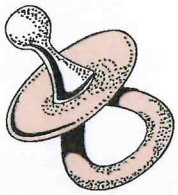
Lead is even more dangerous to children under the age of 6:

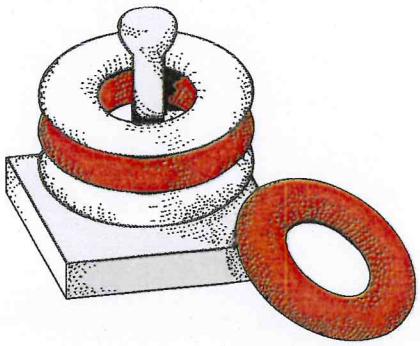
- At this age children's brains and nervous systems are more sensitive to the damaging effects of lead.
- Children's growing bodies absorb more lead.
- Babies and young children often put their hands and other objects in their mouths. These objects can have lead dust on them.

Lead is also dangerous to women of childbearing age:

- Women with a high lead level in their system prior to pregnancy would expose a fetus to lead through the placenta during fetal development.







Lead's Effects

It is important to know that even exposure to low levels of lead can severely harm children.

In children, lead can cause:

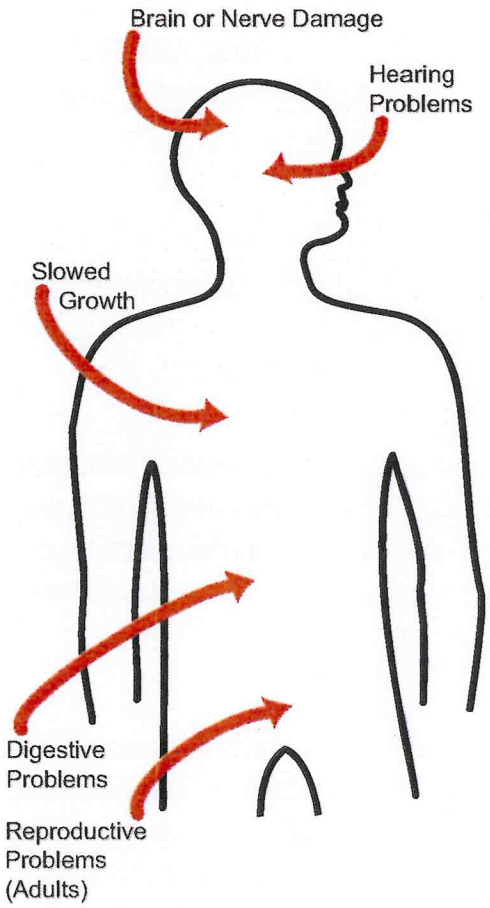
- Nervous system and kidney damage.
- Learning disabilities, attention deficit disorder, and decreased intelligence.
- Speech, language, and behavior problems.
- Poor muscle coordination.
- Decreased muscle and bone growth.
- Hearing damage.

While low-lead exposure is most common, exposure to high levels of lead can have devastating effects on children, including seizures, unconsciousness, and, in some cases, death.

Although children are especially susceptible to lead exposure, lead can be dangerous for adults too.

In adults, lead can cause:

- Increased chance of illness during pregnancy.
- Harm to a fetus, including brain damage or death.
- Fertility problems (in men and women).
- High blood pressure.
- Digestive problems.
- Nerve disorders.
- Memory and concentration problems.
- Muscle and joint pain.



Lead affects the body in many ways.

Where Lead-Based Paint Is Found

In general, the older your home, the more likely it has lead-based paint.

Many homes built before 1978 have lead-based paint. The federal government banned lead-based paint from housing in 1978. Some states stopped its use even earlier. Lead can be found:

- In homes in the city, country, or suburbs.
- In apartments, single-family homes, and both private and public housing.
- Inside and outside of the house.
- In soil around a home. (Soil can pick up lead from exterior paint or other sources such as past use of leaded gas in cars.)

Checking Your Family for Lead

Get your children and home tested if you think your home has high levels of lead.

To reduce your child's exposure to lead, get your child checked, have your home tested (especially if your home has paint in poor condition and was built before 1978), and fix any hazards you may have. Children's blood lead levels tend to increase rapidly from 6 to 12 months of age, and tend to peak at 18 to 24 months of age.

Consult your doctor for advice on testing your children. A simple blood test can detect high levels of lead. Blood tests are usually recommended for:

- Children at ages 1 and 2.
- Children or other family members who have been exposed to high levels of lead.
- Children who should be tested under your state or local health screening plan.

Your doctor can explain what the test results mean and if more testing will be needed.

Identifying Lead Hazards

Lead-based paint is usually not a hazard if it is in good condition, and it is not on an impact or friction surface, like a window. It is defined by the federal government as paint with lead levels greater than or equal to 1.0 milligram per square centimeter, or more than 0.5% by weight.

Deteriorating lead-based paint (peeling, chipping, chalking, cracking or damaged) is a hazard and needs immediate attention. It may also be a hazard when found on surfaces that children can chew or that get a lot of wear-and-tear, such as:

- Windows and window sills.
- Doors and door frames.
- Stairs, railings, banisters, and porches.

Lead from paint chips, which you can see, and lead dust, which you can't always see, can both be serious hazards.

Lead dust can form when lead-based paint is scraped, sanded, or heated. Dust also forms when painted surfaces bump or rub together. Lead chips and dust can get on surfaces and objects that people touch. Settled lead dust can re-enter the air when people vacuum, sweep, or walk through it. The following two federal standards have been set for lead hazards in dust:

- 40 micrograms per square foot ($\mu g/ft^2$) and higher for floors, including carpeted floors.
- 250 $\mu g/ft^2$ and higher for interior window sills.

Lead in soil can be a hazard when children play in bare soil or when people bring soil into the house on their shoes. The following two federal standards have been set for lead hazards in residential soil:

- 400 parts per million (ppm) and higher in play areas of bare soil.
- 1,200 ppm (average) and higher in bare soil in the remainder of the yard.

The only way to find out if paint, dust and soil lead hazards exist is to test for them. The next page describes the most common methods used.

Checking Your Home for Lead

Just knowing that a home has lead-based paint may not tell you if there is a hazard.

You can get your home tested for lead in several different ways:

- A paint **inspection** tells you whether your home has lead-based paint and where it is located. It won't tell you whether or not your home currently has lead hazards.
- A **risk assessment** tells you if your home currently has any lead hazards from lead in paint, dust, or soil. It also tells you what actions to take to address any hazards.
- A combination risk assessment and inspection tells you if your home has any lead hazards and if your home has any lead-based paint, and where the lead-based paint is located.

Hire a trained and certified testing professional who will use a range of reliable methods when testing your home.

- Visual inspection of paint condition and location.
- A portable x-ray fluorescence (XRF) machine.
- Lab tests of paint, dust, and soil samples.

There are state and federal programs in place to ensure that testing is done safely, reliably, and effectively. Contact your state or local agency (see bottom of page 11) for more information, or call **1-800-424-LEAD (5323)** for a list of contacts in your area.

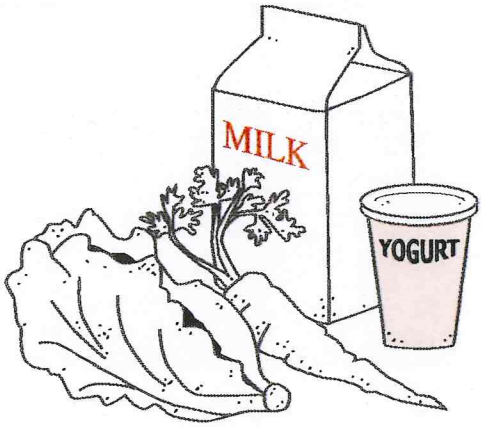
Home test kits for lead are available, but may not always be accurate. Consumers should not rely on these kits before doing renovations or to assure safety.

What You Can Do Now To Protect Your Family

If you suspect that your house has lead hazards, you can take some immediate steps to reduce your family's risk:

- **If you rent, notify your landlord of peeling or chipping paint.**
- **Clean up paint chips immediately.**
- **Clean floors, window frames, window sills, and other surfaces weekly**. Use a mop or sponge with warm water and a general all-purpose cleaner or a cleaner made specifically for lead. REMEMBER: NEVER MIX AMMONIA AND BLEACH PRODUCTS TOGETHER SINCE THEY CAN FORM A DANGEROUS GAS.

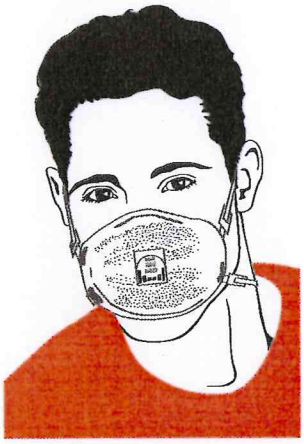
- **Thoroughly rinse sponges and mop heads after cleaning dirty or dusty areas**.
- **Wash children's hands often, especially before they eat and before nap time and bed time.**
- **Keep play areas clean.** Wash bottles, pacifiers, toys, and stuffed animals regularly.
- **Keep children from chewing window sills or other painted surfaces.**
- **Clean or remove shoes before entering your home to avoid tracking in lead from soil.**
- **Make sure children eat nutritious, low-fat meals high in iron and calcium,** such as spinach and dairy products. Children with good diets absorb less lead.



Reducing Lead Hazards In The Home

Removing lead improperly can increase the hazard to your family by spreading even more lead dust around the house.

Always use a professional who is trained to remove lead hazards safely.



In addition to day-to-day cleaning and good nutrition:

- You can **temporarily** reduce lead hazards by taking actions such as repairing damaged painted surfaces and planting grass to cover soil with high lead levels. These actions (called "interim controls") are not permanent solutions and will need ongoing attention.
- To **permanently** remove lead hazards, you should hire a certified lead "abatement" contractor. Abatement (or permanent hazard elimination) methods include removing, sealing, or enclosing lead-based paint with special materials. Just painting over the hazard with regular paint is not permanent removal.

Always hire a person with special training for correcting lead problems—someone who knows how to do this work safely and has the proper equipment to clean up thoroughly. Certified contractors will employ qualified workers and follow strict safety rules as set by their state or by the federal government.

Once the work is completed, dust cleanup activities must be repeated until testing indicates that lead dust levels are below the following:

- 40 micrograms per square foot ($\mu g/ft^2$) for floors, including carpeted floors;
- 250 $\mu g/ft^2$ for interior windows sills; and
- 400 $\mu g/ft^2$ for window troughs.

Call your state or local agency (see bottom of page 11) for help in locating certified professionals in your area and to see if financial assistance is available.

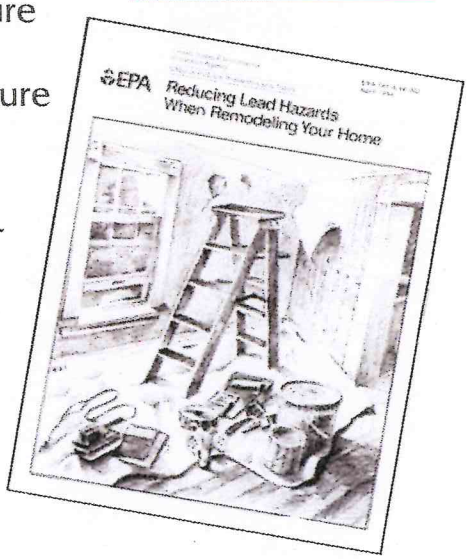
Remodeling or Renovating a Home With Lead-Based Paint

Take precautions before your contractor or you begin remodeling or renovating anything that disturbs painted surfaces (such as scraping off paint or tearing out walls):

- **Have the area tested for lead-based paint.**
- **Do not use a belt-sander, propane torch, high temperature heat gun, dry scraper, or dry sandpaper** to remove lead-based paint. These actions create large amounts of lead dust and fumes. Lead dust can remain in your home long after the work is done.
- **Temporarily move your family** (especially children and pregnant women) out of the apartment or house until the work is done and the area is properly cleaned. If you can't move your family, at least completely seal off the work area.
- **Follow other safety measures to reduce lead hazards.** You can find out about other safety measures by calling 1-800-424-LEAD. Ask for the brochure "Reducing Lead Hazards When Remodeling Your Home." This brochure explains what to do before, during, and after renovations.

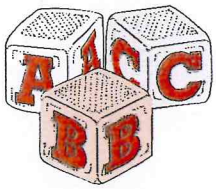
If you have already completed renovations or remodeling that could have released lead-based paint or dust, get your young children tested and follow the steps outlined on page 7 of this brochure.

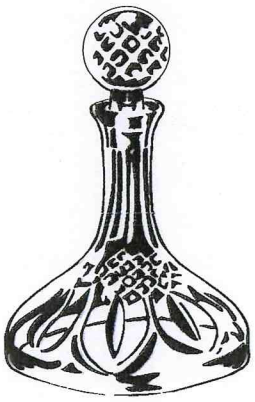
If not conducted properly, certain types of renovations can release lead from paint and dust into the air.



Other Sources of Lead

While paint, dust, and soil are the most common sources of lead, other lead sources also exist.

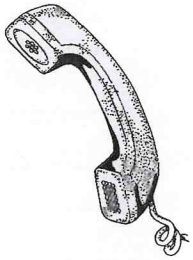




- **Drinking water.** Your home might have plumbing with lead or lead solder. Call your local health department or water supplier to find out about testing your water. You cannot see, smell, or taste lead, and boiling your water will not get rid of lead. If you think your plumbing might have lead in it:
  - Use only cold water for drinking and cooking.
  - Run water for 15 to 30 seconds before drinking it, especially if you have not used your water for a few hours.
- **The job.** If you work with lead, you could bring it home on your hands or clothes. Shower and change clothes before coming home. Launder your work clothes separately from the rest of your family's clothes.
- Old painted **toys** and **furniture.**
- Food and liquids stored in **lead crystal** or **lead-glazed pottery or porcelain.**
- **Lead smelters** or other industries that release lead into the air.
- **Hobbies** that use lead, such as making pottery or stained glass, or refinishing furniture.
- **Folk remedies** that contain lead, such as "greta" and "azarcon" used to treat an upset stomach.

For More Information

The National Lead Information Center

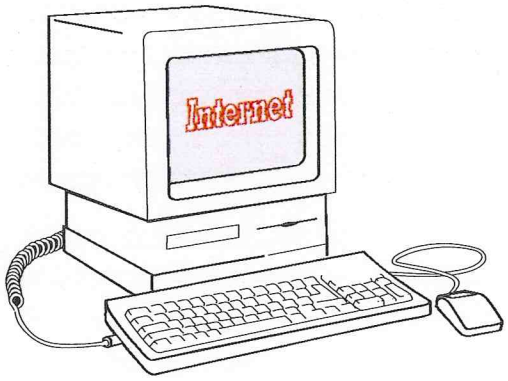


Call **1-800-424-LEAD (424-5323)** to learn how to protect children from lead poisoning and for other information on lead hazards. To access lead information via the web, visit **www.epa.gov/lead** and **www.hud.gov/offices/lead/.**

EPA's Safe Drinking Water Hotline

Call **1-800-426-4791** for information about lead in drinking water.

Consumer Product Safety Commission (CPSC) Hotline



To request information on lead in consumer products, or to report an unsafe consumer product or a product-related injury call **1-800-638-2772**, or visit CPSC's Web site at: **www.cpsc.gov.**

Health and Environmental Agencies

Some cities, states, and tribes have their own rules for lead-based paint activities. Check with your local agency to see which laws apply to you. Most agencies can also provide information on finding a lead abatement firm in your area, and on possible sources of financial aid for reducing lead hazards. Receive up-to-date address and phone information for your local contacts on the Internet at **www.epa.gov/lead** or contact the National Lead Information Center at **1-800-424-LEAD.**

For the hearing impaired, call the Federal Information Relay Service at **1-800-877-8339** to access any of the phone numbers in this brochure.

EPA Regional Offices

Your Regional EPA Office can provide further information regarding regulations and lead protection programs.

EPA Regional Offices

Region 1 (Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island, Vermont)

Regional Lead Contact
U.S. EPA Region 1
Suite 1100 (CPT)
One Congress Street
Boston, MA 02114-2023
1 (888) 372-7341

Region 2 (New Jersey, New York, Puerto Rico, Virgin Islands)

Regional Lead Contact
U.S. EPA Region 2
2890 Woodbridge Avenue
Building 209, Mail Stop 225
Edison, NJ 08837-3679
(732) 321-6671

Region 3 (Delaware; Maryland, Pennsylvania, Virginia, Washington DC, West Virginia)

Regional Lead Contact
U.S. EPA Region 3 (3WC33)
1650 Arch Street
Philadelphia, PA 19103
(215) 814-5000

Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee)

Regional Lead Contact
U.S. EPA Region 4
61 Forsyth Street, SW
Atlanta, GA 30303
(404) 562-8998

Region 5 (Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin)

Regional Lead Contact
U.S. EPA Region 5 (DT-8J)
77 West Jackson Boulevard
Chicago, IL 60604-3666
(312) 886-6003

Region 6 (Arkansas, Louisiana, New Mexico, Oklahoma, Texas)

Regional Lead Contact
U.S. EPA Region 6
1445 Ross Avenue, 12th Floor
Dallas, TX 75202-2733
(214) 665-7577

Region 7 (Iowa, Kansas, Missouri, Nebraska)

Regional Lead Contact
U.S. EPA Region 7
(ARTD-RALI)
901 N. 5th Street
Kansas City, KS 66101
(913) 551-7020

Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming)

Regional Lead Contact
U.S. EPA Region 8
999 18th Street, Suite 500
Denver, CO 80202-2466
(303) 312-6021

Region 9 (Arizona, California, Hawaii, Nevada)

Regional Lead Contact
U.S. Region 9
75 Hawthorne Street
San Francisco, CA 94105
(415) 947-4164

Region 10 (Alaska, Idaho, Oregon, Washington)

Regional Lead Contact
U.S. EPA Region 10
Toxics Section WCM-128
1200 Sixth Avenue
Seattle, WA 98101-1128
(206) 553-1985

CPSC Regional Offices

Your Regional CPSC Office can provide further information regarding regulations and consumer product safety.

Eastern Regional Center
Consumer Product Safety Commission
201 Varick Street, Room 903
New York, NY 10014
(212) 620-4120

Western Regional Center
Consumer Product Safety Commission
1301 Clay Street, Suite 610-N
Oakland, CA 94612
(510) 637-4050

Central Regional Center
Consumer Product Safety Commission
230 South Dearborn Street, Room 2944
Chicago, IL 60604
(312) 353-8260

HUD Lead Office

Please contact HUD's Office of Healthy Homes and Lead Hazard Control for information on lead regulations, outreach efforts, and lead hazard control and research grant programs.

U.S. Department of Housing and Urban Development
Office of Healthy Homes and Lead Hazard Control
451 Seventh Street, SW, P-3206
Washington, DC 20410
(202) 755-1785

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U.S. EPA Washington DC 20460
U.S. CPSC Washington DC 20207
U.S. HUD Washington DC 20410

EPA747-K-99-001
June 2003

Disclosure of Information on Lead-Based Paint and/or Lead-Based Paint Hazards

Lead Warning Statement

Housing built before 1978 may contain lead-based paint. Lead from paint, paint chips, and dust can pose health hazards if not managed properly. Lead exposure is especially harmful to young children and pregnant women. Before renting pre-1978 housing, lessors must disclose the presence of known lead-based paint and/or lead-based paint hazards in the dwelling. Lessees must also receive a federally approved pamphlet on lead poisoning prevention.

Lessor's Disclosure

(a) Presence of lead-based paint and/or lead-based paint hazards (check (i) or (ii) below):

(i) _____ Known lead-based paint and/or lead-based paint hazards are present in the housing (explain).

_____

_____

(ii) _____ Lessor has no knowledge of lead-based paint and/or lead-based paint hazards in the housing.

(b) Records and reports available to the lessor (check (i) or (ii) below):

(i) _____ Lessor has provided the lessee with all available records and reports pertaining to lead-based paint and/or lead-based paint hazards in the housing (list documents below).

_____

_____

(ii) _____ Lessor has no reports or records pertaining to lead-based paint and/or lead-based paint hazards in the housing.

Lessee's Acknowledgment (initial)

(c) _____ Lessee has received copies of all information listed above.

(d) _____ Lessee has received the pamphlet *Protect Your Family from Lead in Your Home.*

Agent's Acknowledgment (initial)

(e) _____ Agent has informed the lessor of the lessor's obligations under 42 U.S.C. 4852d and is aware of his/her responsibility to ensure compliance.

Certification of Accuracy

The following parties have reviewed the information above and certify, to the best of their knowledge, that the information they have provided is true and accurate.

Lessor	Date	Lessor	Date
Lessee	Date	Lessee	Date
Agent	Date	Agent	Date

CHILDPROOF YOUR HOME IMPROVEMENTS.

HAVING WORK DONE ON YOUR PLACE? USE A LEAD-SAFE CERTIFIED CONTRACTOR.

The Danger

Lead paint hazards have not gone away. If your home or apartment was built before 1978, unqualified workers could spread lead paint dust. Even doing a small job.

- **Kids:** Lead exposure can cause lower intelligence, behavior problems and learning disabilities.
- **Pregnant women:** Lead paint dust can be harmful to your developing fetus.
- **All adults:** Exposure to lead paint dust can cause nervouse system effects, high blood pressure, fertility problems, and kidney effects.

The Renovation, Repair and Painting Rule

The EPA is requiring that contractors be Lead-Safe Certified.

- Contractors include: renovators, electricians, HVAC specialists, plumbers, painters and maintenance staff who disrupt more than six square feet of lead paint.
- This rule covers schools, day care centers, or any buildings where children gather.

The Solution

Protect your family and loved ones.

- Make sure to hire a contractor who is Lead-Safe Certified. It may cost just a little more but you'll get the job done right.

To find a contractor who is Lead-Safe Certified near you, visit epa.gov/getleadsafe or call 800-424-LEAD.

To report violations, visit epa.gov/tips

EPA

LEAD-SAFE EPA CERTIFIED FIRM

JAMES A. SEQUIN, AICP
CITY PLANNER

One Jefferson Square • 5th Floor
Waterbury, CT 06706
Office: (203) 574-6817
Fax: (203) 346-3949
Email: jsequin@waterburyct.org

NEIL M. O'LEARY
MAYOR

CITY PLANNING DEPARTMENT
THE CITY OF WATERBURY
CONNECTICUT

June 6, 2014

Mr. Stephen Ball
294 White Deer Rocks Road
Woodbury, CT 06798

RE: Wetlands Determination for Environmental Review
653 Willow Street, Waterbury, CT

Dear Mr. Ball:

We have received your request as part of an Environmental Review that you are preparing, for a determination from the City of Waterbury Inland Wetlands and Watercourses regulatory body, as to whether or not there are wetlands and or a watercourse on a property located at 653 Willow Street in Waterbury, CT.

There are no mapped wetlands or watercourses per the city of Waterbury map entitled "Designated Inland Wetlands and Watercourses of Waterbury, CT". Please note that a definitive determination regarding the actual boundary of wetland soils would have to be made by a Connecticut certified soils scientist.

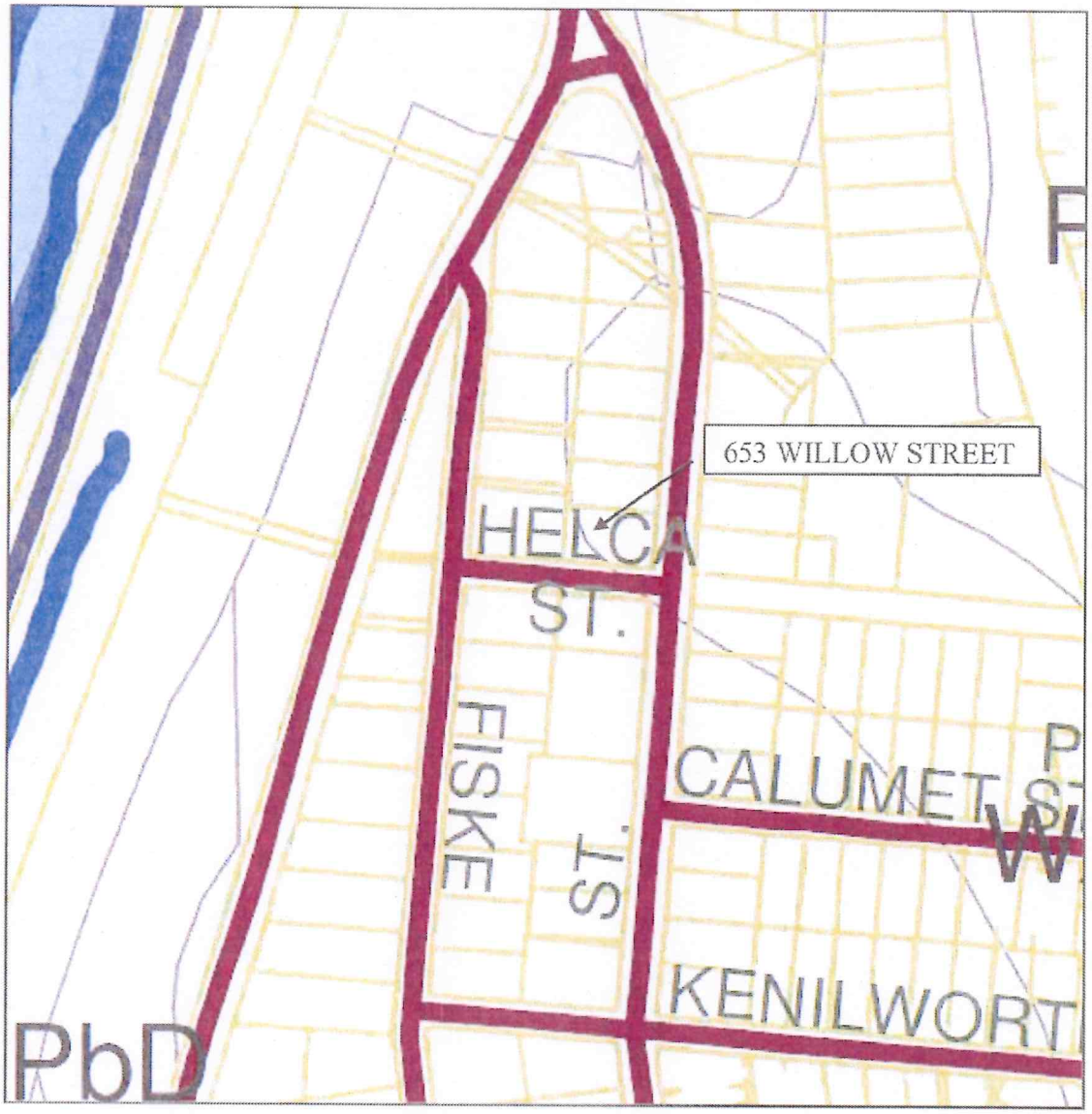
Please do not hesitate to call me at 203-574-6817 or email mbrown@waterburyct.org if you have any questions regarding this review.

Regards,

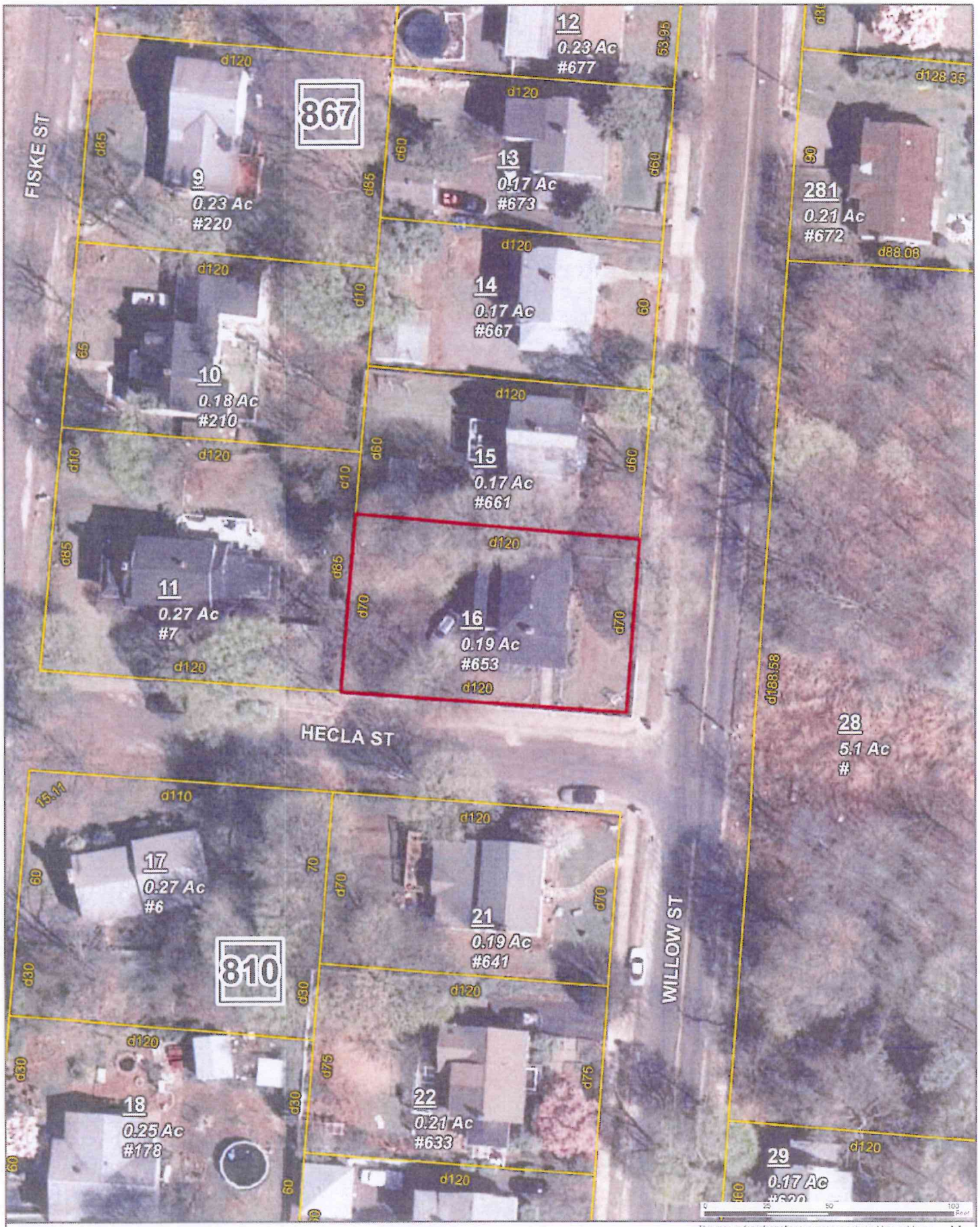
Margaret Brown

Margaret Brown
Land Use Inspector

Cc: James Sequin, Planning Director



City of Waterbury map entitled "Designated Inland Wetlands and Watercourses of Waterbury, CT



City of Waterbury
Public Works Department

MBL: 0145-0867-0016
ADDRESS: 653 WILLOW ST

This map is for informational purposes only and has not been prepared for, or suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to verify the usability of the information. The City of Waterbury makes no warranties, express or implied, as to the use of the information obtained herein.

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