SPECIFICATIONS FOR DEMOLITION OF BUILDINGS AT

151 Plantation Street and 41 Columbia Street

Worcester, Massachusetts

SPECIFICATION FOR DEMOLITION OF BUILDING(s)
LOCATED at 151 Plantation Street

GENERAL

The intent of these specifications is to provide for the demolition and removal, as specified, of building located at **151 Plantation Street,** Worcester, Massachusetts in a manner satisfactory to the Department of Inspectional Services of the City of Worcester, Massachusetts and in accordance with all applicable State, local and Federal laws, rules and regulations. The Demolitions are in accordance with requirements of Chapter 139, Section 1-3 inclusive of the General Laws of Massachusetts.

Please note that the demolition is for the structure and its contents located on the property at 151 Plantation Street as shown on the attached plan. The building is in poor structural condition and some portions may not be accessible.

REQUIREMENTS

The contractor shall include in the bid the price of demolition and removal of this structure, back-filling of foundation hole and rough grading and tamping of backfill to prevent erosion or surface water nuisance on this cleared lot, removing trash, rubbish and debris, leaving lot clean and leveled to uniform grade. Demolition and removal of building(s) shall be as required by the Commonwealth of Massachusetts State Building Code with special attention given to Chapter 1 section 112 and Chapter 33 inclusive. No demolition work shall begin until a permit is issued and required fees are paid.

A. The demolition of this structure must take place under supervision of a Worcester Police Officer and can be stopped for any period time needed.
B. The contractor is required to have a licensed professional remove and legally dispose of oil tanks, boilers, water tanks, etc., if any are located on the property. The contractor shall view the property and investigate for such elements prior to submitting a bid.
C. Demolition should proceed in a systematic manner, from top to bottom. Complete demolition work above each floor or tier before disturbing supporting members on lower levels.
D. Concrete shall be demolished in small sections.
E. Locate demolition equipment throughout structure and remove materials so not to impose excessive loads to supporting walls, floors, or framing.
F. Demolish foundation walls and other below grade construction, including concrete slabs, to a depth of not less than four (4') feet below existing grade.
G. Concrete walls and floors can be used as backfill when demolished and compacted in a manner that no cavities are present. Please ensure that the area to be filled is free of standing water, frost, frozen materials, trash, and debris.
H. Properly dispose of debris away from site in approved disposal areas.
I. Upon completion of the demolition the property must be loomed and seeded.

HAZARDOUS MATERIALS

The demolition contractors who submit bids for the demolition of structures are responsible for viewing the sites and determining the nature and extent of all hazardous materials and special handling materials, which exist prior to bidding. **The estimated extent of hazardous materials and the estimated cost to legally remove and dispose of any hazardous materials shall be included in the base bid.** Caution should be observed when viewing the interior to assess the contents due to its unstable structural condition. The City has engaged a professional consultant to conduct a hazardous materials survey. A copy of the findings is included with this bid.

The contractor who is awarded the bid will then be responsible to conduct a thorough investigation of the structure(s) by a licensed individual and produce a report of those findings. **The cost of such investigation, testing and resultant report shall be included in the bid.**

The reasonable cost to remove any additional hazardous materials found in the subsequent full investigation, above and beyond those contained in the base bid, will be compensated for through change orders to the original contract. Requests for such change orders shall be submitted to the Department of Inspectional Services in writing and include copies of the investigation reports, an itemized breakdown of the costs to remove and legally dispose of the additional hazardous materials and documentation to support the requested costs of disposal are reasonable. If the City determines that the additional cost is fair and reasonable and accurate as verified by the City, compensation will be allowed.

ABILITY AND EXPERIENCE OF BIDDER

The City reserves the right not to award the contract to any bidder who does not furnish evidence of prior experience and current capabilities, including manpower and equipment, necessary to enable him to prosecute the required demolition and to successfully complete the work in the time named in the contract if requested to do so.

PERMITS

The Contractor shall obtain all necessary permits at the Contractor's expense before commencing work, including all arrangements with utility companies and City departments for discontinuance of gas, water, sewer, electricity and telephone service.

HISTORIC BUILDINGS DELAY ORDINACE

No person shall demolish any designated historic building without the approval of the Worcester Historical Commission. Any applicant for a demolition permit shall obtain evidence of approval of the commission for all buildings prior to the Building Commissioner of Inspectional Services issuing any such permit. If a building is deemed to pose an imminent threat to the public health or safety then the Building Commissioner may waive this requirement.

SANITARY AND DRAINAGE CONNECTIONS AND ALL OTHER UTILITIES

The Contractor shall assure that all utilities and city services (e.g. water, sewer, gas, electricity, etc.) are disconnected and appropriate steps taken to protect the Contractor's interest in the property (e.g. capping of disconnected sewers) prior to the scheduling of demolition. The Contractor shall excavate, break and seal all drainage and sanitary sewer connections at the street line of the building lot (property line). Seals within the building will not be accepted. The sealed pipes and drains shall not be back-filled until they have been inspected and approved by the City of Worcester's Department of Public Works.

DEMOLITION DISPOSAL AND FEES

The Contractor shall assure that the building inspector, or other official designated by the building inspector, is aware of their demolition operations at all times. The Contractor must provide sufficient evidence for a determination that he and all other subcontractors meet all Federal, State and local laws and regulations and the terms and conditions of this contract. Without limiting the foregoing, the Contractor is responsible for removal and proper off-site disposal of demolition debris, including oil tanks with or without oil, and any other hazardous debris, including, but not limited to Asbestos. **It is the responsibility of the contractor to determine the nature and extent of all hazardous and special handling materials, which exists on site prior to bidding**. The contractor shall submit evidence of such legal removal and disposal, in the form of trucking slips, and in the case of hazardous materials, disposal permits, as part of their payment request to the City.

RODENT CONTROL

The contractor shall take rodent control measures prior to demolition. These measures shall include a pre-demolition survey and extermination of rodents prior to the start of demolition to prevent their displacement to adjacent structures when necessary. This work when required is to be performed as part of the contract by a licensed exterminator and at no additional cost to the contract.

NOTIFICATION OF ADJACENT PROPERTIES

The Contractor shall provide notification to and protection of all adjacent properties. All demolition is to be confined to the property boundaries. No demolition activities are to be conducted on any public way without both prior consent and/or permits from the Worcester Department of Public Works, the Worcester Police Department, the Traffic Engineering Division of Public Works or the Department of Inspectional Services.

Any work conducted on adjacent private property shall be conducted only with the prior written consent of the property owner**. All adjacent streets and sidewalks must be protected during demolition activities.**

BUILDING SEARCH

The Contractor shall conduct a thorough search of the property immediately prior to the demolition to assure that the property is vacant.

SECURE SITE

The Contractor shall secure the site(s) of building(s) to be demolished, including, but not limited to, the construction of fencing or other protective barriers, police protection and protection of area residents from any and all hazards during demolition as deemed necessary to insure the safety of the public.

INVESTIGATION OF CONDITIONS

Bidders are required to submit their proposals upon the express condition that they have noted the site of the proposed work and are fully acquainted with work to be performed under this contract. The contractors are expected to make their estimates of the facilities needed and the difficulties attending the execution of proposed contract, including local conditions, availability of labor, weather and other contingencies. In no event will the City assume any responsibility whatever for interpretation, deduction or conclusion drawn from the inspection of the site. Failure to acquaint themselves with all available information concerning these conditions will not relieve the successful bidder from responsibility for estimating difficulties and costs of successfully performing and completing the work.

SITE VISIT

A site visit of the properties proposed for demolition within this bid package will be conducted on October 1, 2021 beginning at 10 a.m. at 151 Plantation Street and continuing onto the remaining properties.

METHOD AND ORDER OF DEMOLITION

Upon the award of contract, the Contractor shall immediately proceed to demolish the structure in accordance with the terms of the contract. The work must be completed for final payment. Penalties may be imposed for failure to fully complete demolition to the full satisfaction of the City as specified within this document and the governing contract within thirty days of award of the contract without just cause. The Salvaging of materials may occur at the Contractor's option providing such operation does not impede the demolition process or create either a hazardous or nuisance condition. The method of demolition to be used shall not include burning, or fire, or explosives, of any form on the premises.

The Contractor shall demolish structures in a safe and orderly manner and remove all rubbish and other materials from the premises to the satisfaction and approval of the Department of Inspectional Services of the City of Worcester. If the safety of the public so requires, in the opinion of the City of Worcester, the contractor shall arrange with the Police Department for police protection at no additional cost to the contract.

The contractor shall leave the premises free of rubbish and other like materials including existing rubbish found on the premises.

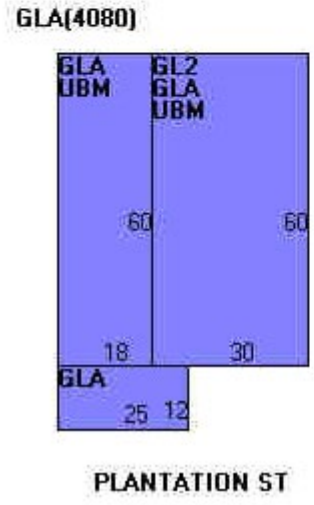
LIQIDATED DAMAGES FOR DELAY

If the work is not completed within the time stipulated in the contract documents, including any extensions of time for excusable delays, which shall be determined by the Purchasing Agent, the contractor shall pay the City a rate of $50.00 per day for each calendar day of delay, until the work is completed. A maximum of one (1) weather related day per week shall be allowed for extensions. No extra allowance will be made for holidays. The City shall enforce the liquidated damages for failure to complete the work within the allotted time frame. Liquidated damages shall be deducted from the final payment for this contract.

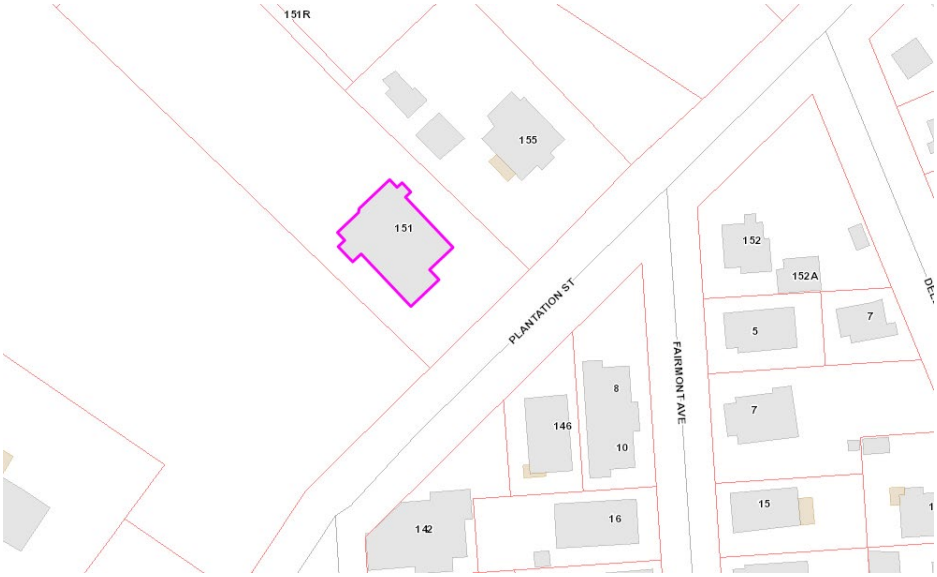
151 Plantation Street

Building Photo

Building Layout



Plot Plan



151 Plantation Street
Aerial View

151 Plantation Street
Google Image

SPECIFICATION FOR DEMOLITION OF BUILDING(s)
LOCATED at 41 Columbia Street

GENERAL

The intent of these specifications is to provide for the demolition and removal, as specified, of building(s) located at **41 Columbia Street,** Worcester, Massachusetts in a manner satisfactory to the Department of Inspectional Services of the City of Worcester, Massachusetts and in accordance with all applicable State, local and Federal laws, rules and regulations. The Demolitions are in accordance with requirements of Chapter 139, Section 1-3 inclusive of the General Laws of Massachusetts.

Please note that the demolition is for the structure(s) and its contents located on the property at 41 Columbia Street as shown on the attached plan. The building is in disrepair and cluttered with debris and some portions may not be accessible.

REQUIREMENTS

The contractor shall include in the bid the price of demolition and removal of this structure, back-filling of foundation hole and rough grading and tamping of backfill to prevent erosion or surface water nuisance on this cleared lot, removing trash, rubbish and debris, leaving lot clean and leveled to uniform grade. Demolition and removal of building(s) shall be as required by the Commonwealth of Massachusetts State Building Code with special attention given to Chapter 1 section 112 and Chapter 33 inclusive. No demolition work shall begin until a permit is issued and required fees are paid.

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B. Demolition should proceed in a systematic manner, from top to bottom. Complete demolition work above each floor or tier before disturbing supporting members on lower levels.
C. Concrete shall be demolished in small sections.
D. Locate demolition equipment throughout structure and remove materials so not to impose excessive loads to supporting walls, floors, or framing.
E. Demolish foundation walls and other below grade construction, including concrete slabs, to a depth of not less than four (4') feet below existing grade.
F. Concrete walls and floors can be used as backfill when demolished and compacted in a manner that no cavities are present. Please ensure that the area to be filled is free of standing water, frost, frozen materials, trash, and debris.
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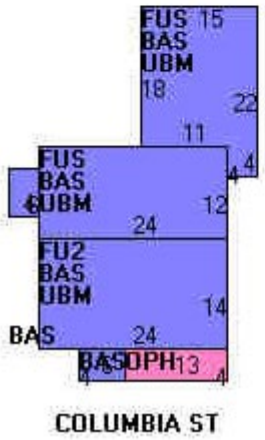
41 Columbia Street
Plot plan

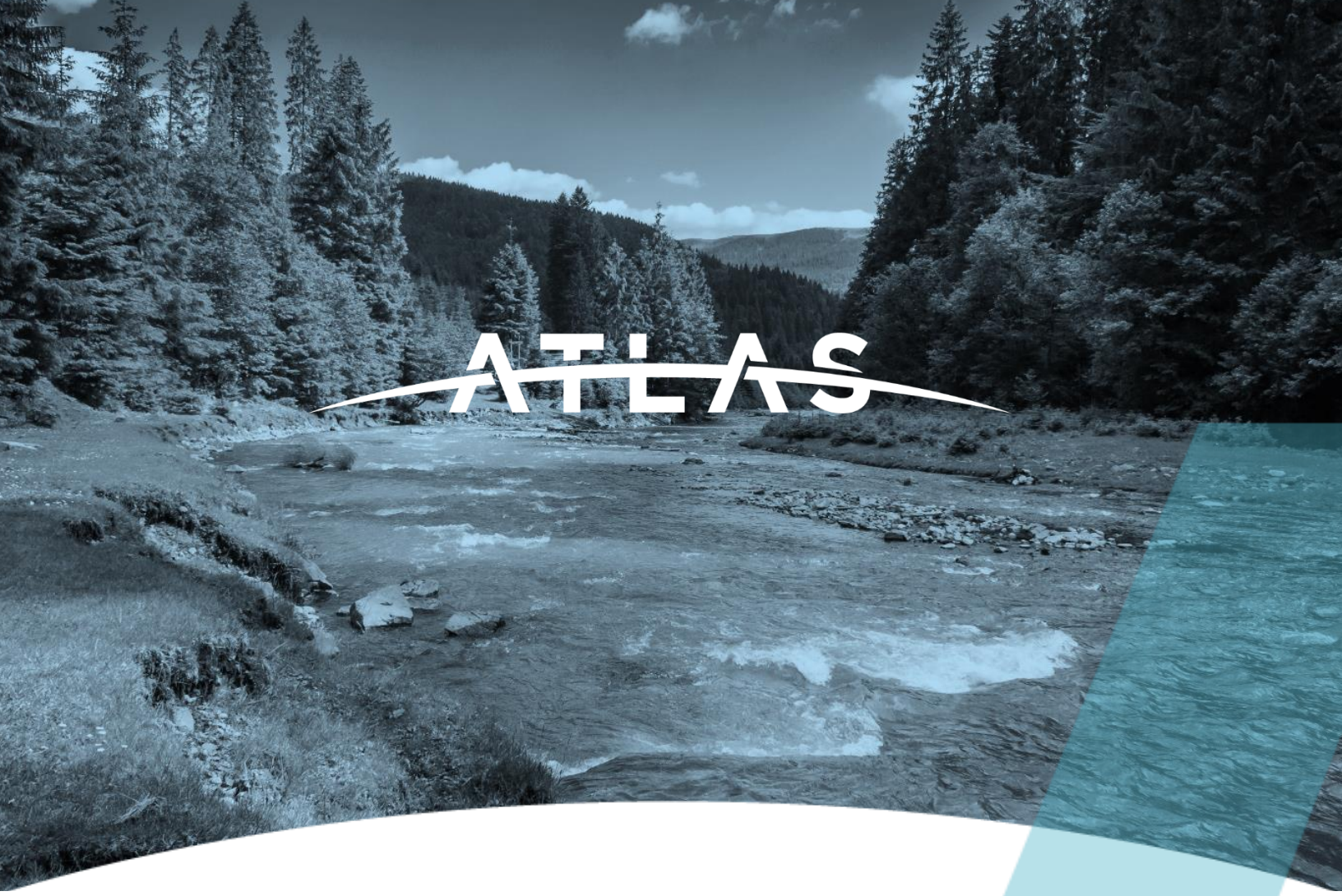
41 Columbia Street
Aerial view

Building Photo

Building Layout



41 Columbia Street
Google Image



HAZARDOUS BUILDING MATERIALS INSPECTION REPORT

151 PLANTATION STREET
WORCESTER, MASSACHUSETTS
ATLAS PROJECT 6000005912

PREPARED FOR:

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Director of Housing and Health Inspections
Department of Inspectional Services
City of Worcester
25 Meade Street
Worcester, Massachusetts

PREPARED BY:

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September 13, 2021

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Appendix I Asbestos Bulk Sample Analysis Results By PLM

Appendix II Lead Paint Chip Analysis Report

1.0 EXECUTIVE SUMMARY

ATC Group Services dba Atlas Technical Consultants (Atlas) was retained by the City of Worcester to perform a hazardous building materials survey to support the demolition of the building, located at 151 Plantation Street, Worcester, Massachusetts. Atlas understands that the building is scheduled to be demolished. The inspection was performed in accordance with Atlas Proposal 21-11613, dated July 26, 2021.

Atlas's scope of work included a survey for asbestos containing materials (ACM) and lead containing paints throughout the building.

1.1 ASBESTOS

Section 2.0 discusses the ACM survey and sampling methodology. This survey involved a visual inspection and collection of the suspect building materials. In consideration that the building is scheduled for demolition, Atlas performed limited exploratory demolition to identify hidden ACMs.

The asbestos survey was performed by Massachusetts Division of Labor Standards (DLS) certified Asbestos Inspector, Mr. Daniel Roy (AI-900970), on August 25, 2021. A total of thirty-four (34) samples of suspect ACM were collected with thirty-two (32) analyzed to determine asbestos content. The Atlas inspector performed both the visual inspection and bulk sampling in the building according to methods outlined in the U.S. Environmental Protection Agency (EPA) guidance document titled, "Guidance for Controlling Asbestos-Containing Materials in Buildings" (Document No. 560/5-85/024). Please find the Asbestos Identification Laboratory (AIL) Polarized Light Microscopy (PLM) bulk sample results included as Appendix A.

1.2 LEAD DETERMINATION

Atlas performed a lead paint determination on representative locations of the building. The lead paint testing was performed by collecting paint chip samples. Paint chip samples were submitted to ProScience Analytical Services for analysis in accordance with EPA method SW846—3050B/7000B. ProScience is an AIHA-LAP Certified Laboratory with lab ID number: 102754.

Results of the lead determination indicated that locations throughout the building will be impacted by the upcoming project was found to contain a detectable level of lead. Table 2, found in Section 3.2 presents the findings of Atlas's lead determination.

LIMITATIONS

Our professional services have been performed, our findings obtained and our recommendations prepared in accordance with customary principles and practices in the field of environmental science and engineering. This statement is in lieu of other statements either expressed or implied. This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated.

Environmental evaluations are limited in the sense that conclusions and recommendations are developed and information obtained from limited research and secondary sources. Except as set forth in this report, Atlas has made no independent investigations as to the accuracy or completeness of the information derived from the secondary sources and personal interviews and has presumed that such information was accurate and complete.

This report is intended for the sole use of City of Worcester. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or re-use of this document or the findings, conclusions, or recommendations, is at risk of said user.

CERTIFICATION OF RESULTS

This report has been prepared for the exclusive use of City of Worcester. Photocopying of this document by parties other than those designated by the Client, or use of this document for purposes other than it is intended, is prohibited.

Respectfully submitted 13th day of September, 2021.

Atlas Technical Consultants LLC

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2.0 ASBESTOS CONTAINING MATERIALS SURVEY

2.1 Sampling Methodology

The initial asbestos survey was performed by Massachusetts Division of Labor Standards (DLS) certified Asbestos Inspector, Mr. Daniel Roy (AI-900970), on August 25, 2021. Bulk samples, representing individual homogenous areas of suspect materials were collected in a randomly distributed manner, in accordance with the methods outlined below.

Building materials exist in the form of thermal systems insulation (TSI), surfacing materials, and miscellaneous materials.

The following generally illustrates the sampling strategy employed by Atlas where feasible:

(a) Surfacing materials - In a randomly distributed manner, collect bulk samples of surfacing materials, representative of each homogeneous area, and not assumed to be ACM.

(1) Collect at least three bulk samples from each homogeneous area that is less than or equal to 1,000 ft^2.
(2) Collect at least five bulk samples from each homogeneous area that is greater than 1,000 ft^2, but less than or equal to 5,000 ft^2.
(3) Collect at least seven bulk samples from each homogeneous area that is greater than 5,000 ft^2.

(b) Thermal systems insulation.

(1) In a randomly distributed manner, collect at a minimum, three (3) bulk samples of thermal systems insulation material, representative of each homogeneous area, and not assumed to be ACM.
(2) Collect, at a minimum, one (1) bulk sample of patched thermal systems insulation, representative of each homogenous area, and not assumed to be ACM, providing the section of patch was less than 6 linear or square feet.
(3) Collect, at a minimum, three (3) representative bulk samples of each insulated mechanical system not assumed to be ACM, including, but not limited to cementitious material used on pipe fittings such as tees, elbows, or valves. Representative sampling was conducted in a manner sufficient as to identify whether each homogenous area is either asbestos or non-asbestos containing.
(4) Bulk samples are not required to be collected from any homogeneous area where the accredited asbestos inspector has determined that the thermal systems insulation is a non-suspect material (i.e., fiberglass, foam glass, rubber, or any other non-ACM).

(c) Miscellaneous materials - Collect, at a minimum, two (2) representative bulk sample of each miscellaneous material not assumed to be ACM, including, but not limited to ceiling tiles, floor tiles, associated floor tile mastic, roofing materials, waterproofing, etc. Representative sampling was conducted in a manner sufficient as to identify whether each homogenous area is either asbestos or non-asbestos containing.

2.2 Asbestos-Containing Materials

Atlas conducted the asbestos survey in areas associated with the upcoming demolition project of the building located at 151 Plantation St., Worcester, Massachusetts. This survey involved a visual inspection and collection of the suspect building materials. In consideration that the building is scheduled for demolition, Atlas performed limited exploratory demolition to identify hidden ACMs. Asbestos bulk sample analysis results are located in Appendix A.

PLM Bulk sample analysis indicated that the following materials identified and sampled by Atlas were found to contain asbestos:

- Black Tar Associated with White Asphalt Shingle
- Black tar Associated with Green Asphalt Shingle

None of the other materials identified and sampled by Atlas were found to contain asbestos.

The following table presents a list of the identified, confirmed ACMs in the garage building. Note, ACM is identified by the MA DEP as any material or product containing one (1) percent or greater asbestos by weight.

Table 1 – Summary of Identified Asbestos-Containing Materials
151 Plantation Street
Worcester, Massachusetts

Location	Material	Estimated Quantity	Result
1st Floor Roof	Black Tar Associated with White Asphalt Shingle	1000 SF	5%
Lot Debris	Black Tar Associated with Green Asphalt Shingle	500 SF	3%

The following table lists the suspect materials identified that were sampled and determined to be non-ACM.

Table 2 – Summary of Non Asbestos-Containing Materials
151 Plantation Street
Worcester, Massachusetts

Material	Sample Location(s)
Gypsum Wallboard under Plaster	1st Floor
Plaster over Gypsum Wallboard	1st Floor
Ceramic Tile Mortar	Front Entrance Area
Ceramic Tile Grout	Front Entrance Area
Yellow Carpet Mastic	By Front Entrance
Tan Mirror Glue Daubs	Kitchen Area
Vinyl Sheet Flooring	1st Floor by Entrance
Mastic Associated with Vinyl Sheet Flooring	1st Floor by Entrance
Exterior Wall Grout on Rock Slabs	Exterior of Building
Exterior Wall Grout Associated with CMU	Exterior of Building
Black Asphalt Shingle	1st Floor Roof
Black Tar Associated with Black Asphalt Shingle	1st Floor Roof

White Asphalt Shingle	1st Floor Roof
Green Asphalt Shingle	Lot Debris
Roof Vapor Barrier	1st Floor Roof

2.3 Analytical Method

Samples were placed in labeled containers, which were sealed and submitted to the laboratory for analysis. Bulk samples of suspect materials were analyzed by Asbestos Identified Laboratory (AIL) of Woburn, Massachusetts, by means of the EPA-approved polarized light microscopy with dispersion staining (PLM/DS) method using the visual estimation technique for asbestos quantification. AIL is fully accredited for bulk sample analysis under the National Voluntary Laboratory Accreditation Program (NVLAP), administered by the National Institute of Standards and Technology, and is also licensed by the Massachusetts DLS (License Nos. AA-000208). Bulk samples were analyzed for asbestos content using EPA Method 600/R-93/116. The visual estimation technique was used to quantify asbestos concentrations. The PLM/DS analytical method is modeled after 40 CFR Part 763, Subpart F, Appendix A: "Interim Method for the Determination of Asbestos in Bulk Insulation Samples." If a material contains 1% asbestos or greater, it is considered to be asbestos-containing material. Upon client request, or at the recommendation of the analyst, the 'Point Counting Method' may be used to verify the presence/absence of asbestos when a sample contains less than 10% asbestos by visual estimate.

2.4 Consideration for Hidden Materials

Atlas conducted the asbestos survey in areas associated with the upcoming demolition project of the building located at 151 Plantation St., Worcester, Massachusetts. This survey involved a visual inspection and collection of the suspect building materials. In consideration that the building is scheduled for demolition, Atlas performed limited exploratory demolition to identify hidden ACMs.

Atlas recommends if a suspect material has not been positively identified, but is similar in mode of occurrence or physical properties as other identified ACM, it should be considered asbestos containing. Only through further sampling and analysis should a suspect material be identified as non-asbestos.

2.5 Recommendations

Atlas understands that demolition activities are planned for this project. All identified ACM that will be impacted by the planned demolition project should be properly removed and disposed of by a Commonwealth of Massachusetts licensed Asbestos Contractor prior to disturbance.

Atlas recommends that precautions be taken to prevent unauthorized disturbance of identified ACM in this report.

Atlas also recommends the following as part of the abatement process:

- Although the asbestos contractor is required to follow the requirements outlined in Federal, Massachusetts State, and local regulations regarding asbestos during any abatement project, Atlas recommends the development of a project specification and the use of project oversight to ensure compliance with all applicable regulations as well as protect the interest of the client for all abatement work performed at the Site. The project specification shall reference the regulations pertinent to each project, including those work procedures that shall be followed by asbestos abatement personnel.

- As part of each abatement contractor bidding process, a unit price schedule for the abatement of asbestos-containing materials should be established. The unit price schedule should include costs for those materials identified within this report, as well as those materials that may potentially be uncovered during renovation/demolition activities. Included should be unit prices for the removal of asbestos-containing materials (e.g., floor tile, floor tile mastic, gray duct sealant), as well as those non-asbestos-containing materials, which may be asbestos contaminated (i.e. carpeting, plywood, etc.).

- Project oversight will provide City of Worcester with on-site technical expertise during all phases of the abatement work. Project oversight provides a constant management of the abatement project to ensure that all identified asbestos-containing materials are removed in accordance with all applicable regulations and to prevent an asbestos fiber release. Tasks performed during project oversight should include periodic work inspections to ensure that all procedures employed by the abatement contractor are acceptable, and air monitoring around each work area to detect elevated asbestos fiber levels.

3.0 LEAD PAINT DETERMINATION

Atlas performed a limited lead-containing paint (LCP) determination on representative paints that will be impacted by the upcoming demolition project. The lead determination was performed by Atlas's Lead Paint Inspector, Mr. Daniel Roy. Paint chip samples were submitted to ProScience Analytical Services, Inc. for analysis in accordance with EPA method SW846—7000B/3051. ProScience is an AIHA-LAP Certified Laboratory with lab ID number: 102754. Paint Chip analysis results are located in Appendix B.

3.1 Summary of Findings

The table below provides the results of the lead paint testing. The Flame AAS readings are expressed in percent weight (% wt.).

Table 3 – Lead Paint Results
151 Plantation Street
Worcester, Massachusetts

SAMPLE NUMBER	LOCATION	SUBSTRATE	COLOR	FLAME AAS RESULT (%WEIGHT)
01A	Interior	Cement	Light Blue	**0.35**
01B	Interior	Cement	Light Blue	**0.30**
02A	Exterior	Cement	Brown	**0.10**
02B	Exterior	Cement	Brown	**0.10**
03A	Interior	Plaster	Red	**0.28**
03B	Interior	Plaster	Red	**0.34**
04A	Interior	Wood	Brown	**0.40**
04B	Interior	Wood	Brown	**0.55**
05A	Entrance	Wood	White	**<RL**
05B	Entrance	Wood	White	**<RL**
06A	Entrance	Wood	Dark Blue	**0.098**
06B	Entrance	Wood	Dark Blue	**0.14**
07A	Interior	Wood	Blue	**4.3**
07B	Interior	Wood	Blue	**9.0**

<RL – Below Reporting Limit

3.2 Regulatory Implications and Regulations

The implications of lead paint existing in a non-residential building are related to the future use of the facility and the need to impact these painted surfaces during the repainting process.

The Occupational Safety and Health Administrative (OSHA) does not acknowledge any quantitative threshold for a lead-based paint. Paint with a detectable amount of lead, regardless of the level, is recognized as a lead-containing paint. The possible exposure hazard to workers impacting these coated surfaces should be assessed and contractors and their employees must adhere to the OSHA Lead in Construction standard found at 29 CFR 1926.62.

OSHA recognizes that construction type work on surfaces coated with lead-containing paint has a **potential** to expose workers to hazardous levels of lead and requires that appropriate safety and health measures be followed as stated in 29 CFR 1926.62. OSHA states that until the employer performs an exposure

assessment and documents that employees are not exposed above the permissible exposure limit (PEL) of greater than 50 micrograms per cubic meter (µg/m^3) of air, the employer must treat employees as if they were exposed above the PEL for the following operations:

- Manual renovation and demolition of structures, manual scraping, manual sanding, and use of heat gun where lead-containing coatings or paints are present;
- Abrasive blasting;
- Power tool cleaning;
- Lead burning;
- Using lead-containing mortar or spray painting with lead-containing paint;
- Abrasive blasting, rivet busting, or welding, cutting, or burning on any structure where lead-containing coatings or paint are present;
- Cleanup activities where dry expendable abrasives are used; and
- Any other task the employer believes may cause exposure in excess of the PEL.

Work precautions include providing respiratory protection, protective work clothing and equipment, change areas, hand washing facilities, biological monitoring, and training until an exposure assessment has determined that the work activity will result in an exposure below the PEL. Additional requirements under this standard include a written compliance program as well as record keeping.

APPENDIX A

ASBESTOS BULK SAMPLE ANALYSIS RESULTS BY PLM

Asbestos Identification Laboratory.

165 New Boston St., Ste 227
Woburn, MA 01801
781-932-9600

Web: www.asbestosidentificationlab.com Email: mikemanning@asbestosidentificationlab.com

NVLAP® Testing Lab Code: 200919-0

Batch: 68277

Daniel Roy
Atlas Technical Services, Woburn
10 State Street
Suite 100
Woburn, MA 01801

Project Information

151 Plantation St.,
Worcester

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

Dear Daniel Roy,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project. The Analysis Method is BULK PLM ANALYSIS, EPA/600/R-93/116The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.
Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. Samples containing subsamples or layers will be analyzed separately when applicable. Reports are kept at Asbestos Identification Laboratory for three years. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

- NVLAP Lab Code: 200919-0
- Massachusetts Certification License: AA000208
- State of Connecticut, Department of Public Health Approved Environmental Laboratory Registration Number: PH-0142
- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Daniel Roy for your business.

Michael Manning
Owner/Director

Daniel Roy
Atlas Technical Services, Woburn
10 State Street
Suite 100
Woburn, MA 01801

Project Information

151 Plantation St.,
Worcester

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
01A / 758350	Gypsum Wallboard under Plaster	1st Floor	gray	Cellulose 2 Non-Fibrous 98	None Detected
01B / 758351	Gypsum Wallboard under Plaster	1st Floor	gray	Cellulose 2 Non-Fibrous 98	None Detected
02A / 758352	Plaster over Gypsum Board	1st Floor	gray	Non-Fibrous 100	None Detected
02B / 758353	Plaster over Gypsum Board	1st Floor	gray	Non-Fibrous 100	None Detected
03A / 758354	Ceramic Tile Thiset	Front Entrance Area	gray	Non-Fibrous 100	None Detected
03B / 758355	Ceramic Tile Thinset	Front Entrance Area	gray	Non-Fibrous 100	None Detected
04A / 758356	Ceramic Tile Grout	Front Entrance Area	gray	Non-Fibrous 100	None Detected
04B / 758357	Cermaic Tile Grout	Front Entrance Area	gray	Non-Fibrous 100	None Detected
05A / 758358	Yellow Carpet Mastic	By Front Entrance	yellow	Non-Fibrous 100	None Detected
05B / 758359	Yellow Carpet Mastic	By Front Entrance	yellow	Non-Fibrous 100	None Detected
06A / 758360	Tan Mirror Glue Daubs	Kitchen Area	yellow	Non-Fibrous 100	None Detected
06B / 758361	Tan MIrror Glue Daubs	Kitchen Area	yellow	Non-Fibrous 100	None Detected
07A / 758362	Vinyl Sheet Flooring	1st Floor by Entrance	multi	Cellulose 5 Non-Fibrous 95	None Detected
07B / 758363	Vinyl Sheet Flooring	1st Floor by Entrance	multi	Cellulose 5 Non-Fibrous 95	None Detected
08A / 758364	Mastic Assoc. W/ Vinyl Sheet Flooring	1st Floor by Entrance	black	Cellulose 2 Non-Fibrous 98	None Detected
08B / 758365	Mastic Assoc. W/ Vinyl Sheet Flooring	1st Floor by Entrance	black	Cellulose 2 Non-Fibrous 98	None Detected

Sampled: August 25, 2021 **Received:** August 25, 2021 **Analyzed:** August 25, 2021

Thursday 26 August 2021

Analyzed by: Erik Gongas **Batch:** 68277

Daniel Roy
Atlas Technical Services, Woburn
10 State Street
Suite 100
Woburn, MA 01801

Project Information

151 Plantation St.,
Worcester

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
09A / 758366	Exterior Wall Grout on Rock Slabs	Exterior of Building	gray	Non-Fibrous 100	None Detected
09B / 758367	Exterior Wall Grout on Rock Slabs	Exterior of Building	gray	Non-Fibrous 100	None Detected
10A / 758368	Exterior Wall Grout Assoc. W/ CMU	Exterior of Building	gray	Fiberglass 2 Non-Fibrous 98	None Detected
10B / 758369	Exterior Wall Grout Assoc. W/ CMU	Exterior of Building	gray	Fiberglass 2 Non-Fibrous 98	None Detected
11A / 758370	Black Asphalt Shingle	1st Floor Roof	black	Cellulose 20 Non-Fibrous 80	None Detected
11B / 758371	Black Asphalt Shingle	1st Floor Roof	black	Cellulose 20 Non-Fibrous 80	None Detected
12A / 758372	Black Tar Assoc. W/ 11A	1st Floor Roof	black	Cellulose 60 Non-Fibrous 40	None Detected
12B / 758373	Black Tar Assoc. W/ 11A	1st Floor Roof	black	Cellulose 60 Non-Fibrous 40	None Detected
13A / 758374	White Asphalt Shingle	1st Floor Roof	black	Cellulose 20 Non-Fibrous 80	None Detected
13B / 758375	White Asphalt Shingle	1st Floor Roof	black	Cellulose 20 Non-Fibrous 80	None Detected
14A / 758376	Black Tar Assoc. W/ 13A	1st Floor Roof	black	Cellulose 60 Non-Fibrous 35	**Detected** **Chrysotile 5**
14B / 758377	Black Tar Assoc. W/ 13A	1st Floor Roof			Not Analyzed
15A / 758378	Green Asphalt Shingle	Lot Debris	black	Cellulose 20 Non-Fibrous 80	None Detected
15B / 758379	Green Asphalt Shingle	Lot Debris	black	Cellulose 20 Non-Fibrous 80	None Detected
16A / 758380	Black Tar Assoc. W/ 15A	Lot Debris	black	Cellulose 60 Non-Fibrous 37	**Detected** **Chrysotile 3**
16B / 758381	Black Tar Assoc. W/ 15A	Lot Debris			Not Analyzed

Sampled: August 25, 2021 **Received:** August 25, 2021 **Analyzed:** August 25, 2021

Thursday 26 August 2021

Analyzed by: Erik Gongas **Batch:** 68277

Daniel Roy
Atlas Technical Services, Woburn
10 State Street
Suite 100
Woburn, MA 01801

Project Information

151 Plantation St.,
Worcester

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
17A / 758382	Roof Vapor Barrier	1st Floor Roof	black	Cellulose 70 Non-Fibrous 30	None Detected
17B / 758383	Roof Vapor Barrier	1st Floor Roof	black	Cellulose 70 Non-Fibrous 30	None Detected

Sampled: August 25, 2021 **Received:** August 25, 2021 **Analyzed:** August 25, 2021

Thursday 26 August 2021

Analyzed by: Erik Gongas **Batch:** 68277

Client: City of Worcester
Address: 181 Plantation Street Worcester
Project Site & #:
Phone / email address: 484-844-0504 DanRay@greatlas.com
Ric.Nunes@greatlas.com
Contact: Ric Nunes & Dan Ray
Relinquish by/date: 8/25/2021 - Dan Ray
Received by/date: GJM 8/26/21
# of Samples Received: 34

CHAIN OF CUSTODY

EPA/600/R-93/116

Asbestos Identification Lab

165 New Boston St.
Suite 227
Woburn, MA 01801
(781)932-9600
www.asbestosidentificationlab.com

Date Sampled: 8/25/2021

BATCH# 68277 Rev 06/16

Turnaround Time: [ ] Less 3 Hrs [ ] Same Day [X] Next Day [ ] Two Day
Sample Method: [X] Bulk [ ] Soil [ ] Wipe [ ] Point Count
Stop on 1st Positive? Yes/No
Notify Method: Mail/E-Mail/Verbal
Anayzed By:
Date: 8/25/2021

Temp in Celsius = 4

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
68350	01A	Material: Gypsum wallboard under plaster Location: 1st Floor	0	gy	w	Sm	y	Chrysotile															
								Amosite															
								Crocidolite											2				
								Tremolite															
								Anthophyllite											2				98
								Actinolite															
51	01B	Material Location	0	gy	w	Sm	y	Chrysotile															
								Amosite															
								Crocidolite											2				
								Tremolite															
								Anthophyllite											2				98
								Actinolite															
52	02A	Material: Plaster over Gypsum board Location: 1st Floor	0	gy	w	Sm	y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															100
								Actinolite															

EC

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = 21 / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
53	02B	Material: Plaster over Gypsum board Location: 1st Floor	0	Gy	Ho	Sm	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															100
54	03A	Material: Ceramic tile thinset Location: Front Entrance Area	0	Gy	Ho	Sm	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															100
55	03B	Material: ⊥ | ⊥ Location	0	Gy	Ho	Sm	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															100
56	04A	Material: Ceramic Tile Grout Location: Front Entrance Area	0	Gy	Ho	Sm	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															100
57	04B	Material: ⊥ | ⊥ Location	0	Gy	Ho	Sm	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite		—													
								Actinolite															100

Temp in Celcius = 71

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
58	05A	Material: Yellow Compact mastic Location: By Front Entrance	0	y	y	s	w	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															100
								Anthophyllite															
								Actinolite															
59	05B	Material: ⊥ Location: ⊥	0	y	y	s	w	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															100
								Actinolite															
60	06A	Material: Tan Mirror Glue Dot Location: Kitchen Area	0	y	y	s	w	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															100
								Actinolite															
61	06B	Material: ⊥ Location: ⊥	0	y	y	s	w	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															100
								Actinolite															
62	07A	Material: Vinyl Sheet Flooring Location: 1st Floor By entrance	0	w	[illegible]	[illegible]	N	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite		—									5				95
								Actinolite															

Temp in Celcius = 21

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
63	07B	Material: Vinyl sheet Flooring Location: 1st Floor By entrance	0	[illegible]		[illegible]		Chrysotile Amosite Crocidolite Tremolite Anthophyllite Actinolite											R 5				95
64	08A	Material: Mastic assoc w/ Vinyl sheet flooring Location: 1st Floor By Entrance	0	blky		Gw		Chrysotile Amosite Crocidolite Tremolite Anthophyllite Actinolite											R 2				98
65	08B	Material: (same) Location: (same)	0	bly		Gw		Chrysotile Amosite Crocidolite Tremolite Anthophyllite Actinolite											R 2				98
66	09A	Material: Exterior wall grout on rock slabs Location: Exterior of Building	0	gry		Gw		Chrysotile Amosite Crocidolite Tremolite Anthophyllite Actinolite															100
67	09B	Material: (same) Location: (same)	0	gry		Gw		Chrysotile Amosite Crocidolite Tremolite Anthophyllite Actinolite															100

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = 21 / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
68	10A	Material: Exterior wall Grout assoc. w/ EMU Location 1: Exterior of Building	O	Gy	N	Sm		Chrysotile									2						
								Amosite															
								Crocidolite									2						
								Tremolite									2						98
								Anthophyllite															
								Actinolite															
69	10B	Material Location	O	Gy	N	Sm		Chrysotile															
								Amosite															
								Crocidolite									2						
								Tremolite									2						
								Anthophyllite															98
								Actinolite															
70	11A	Material: Black Asphalt shingle Location: 1st Floor Roof	O	Blk	N	Sm	F	Chrysotile															
								Amosite															
								Crocidolite											2				
								Tremolite											20				80
								Anthophyllite															
								Actinolite															
71	11B	Material Location	O	Blk	N	Sm	F	Chrysotile															
								Amosite															
								Crocidolite											2				
								Tremolite											20				80
								Anthophyllite															
								Actinolite															
72	12A	Material: Black Tar assoc. w/ 11A Location: 1st Floor Roof	O	Blk	N	Sm	F	Chrysotile															
								Amosite															
								Crocidolite											2				
								Tremolite															
								Anthophyllite		—									60				40
								Actinolite															

Temp in Celcius = 21

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
73	12B	Material: Black Tar assoc. w/ 11A Location: 1st Floor Roof	C	Brn	Hg	Tr	N	Chrysotile															
								Amosite															
								Crocidolite											12				
								Tremolite															
								Anthophyllite											8				3
								Actinolite															
74	13A	Material: White Asphalt Shingle Location: 1st Floor Roof	C	Brn	Hg	Tr	N	Chrysotile															
								Amosite															
								Crocidolite											12				
								Tremolite															
								Anthophyllite											20				8
								Actinolite															
75	13B	Material: ⊥ Location: ⊥	C	Brn	Hg	Tr	N	Chrysotile															
								Amosite															
								Crocidolite											12				
								Tremolite															
								Anthophyllite											20				8
								Actinolite															
76	14A	Material: Black Tar assoc. w/ 13A Location: 1st Floor Roof	O	Brn	Hg	Tr	N	Chrysotile	5	W	=	P	C	N	1.53	1.53							
								Amosite															
								Crocidolite											12				
								Tremolite															
								Anthophyllite											60				35
								Actinolite															
77	14B	Material: ⊥ Location: ⊥						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite	—														
								Actinolite															

DUP

Temp in Celcius = 21

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	% of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI ∥	RI ⊥	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
78	15A	Material: Green Asphalt Shingle; Location: Lot Debris	0	blk	~	fib	N	Chrysotile											P 20				80
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															
79	15B	Material: (same); Location: (same)	0	blk	~	fib	N	Chrysotile											P 20				80
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															
80	16A	Material: Black Tar assoc. w/ 15A; Location: Lot Debris	0	blk	~	fib	N	Chrysotile 3	~~X~~	w	=	+	⊂	~	low	low			P 60				37
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															
81	16B	Material: (same); Location: (same)						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															
82	17A	Material: Roof Vapor Barrier; Location: 1st Floor Roof	0	blk	~	rough	N	Chrysotile											P 70				30
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															

Page 8 of 8

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	% of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI ‖	RI ⊥	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
		Temp in Celcius = 21	Stereo Scope						Optical Properties						RI		Non-Asbestos Percentage (%)						
758383	17B	Material: Roof Vapor Barrier Location: 1st Floor Roof	0	Blkn		R	N	Chrysotile											70 B				30
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															
		Material: Location:						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															
		Material: Location:						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															
		Material: Location:						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															
		Material: Location:						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															

APPENDIX B

LEAD PAINT CHIP ANALYSIS RESULTS

ProScience Analytical Services, Inc.
22 Cummings Park, Woburn, MA 01801

Telephone: 781-935-3212
Facsimile: 781-932-4857
Email: chemistry@proscience.net

Laboratory Report

Contact: Dan Roy
Client: Atlas Technical Consultants, LLC
Address: 10 State St., Suite 100
Woburn, MA 01801

Batch #: C 308417
Date received: 8/25/2021
Date analyzed: 8/26/2021
Date of report: 8/26/2021

Project # N/A
P.O.# N/A
Project Site: City of Worcester
151 Plantation Street, Worcester, MA

AIHA-LAP, LLC Lab ID 102754

Lead Analysis In Paint Using SOP Based on SW846-7000B/3051
Results in weight percent on an "as received" weight basis

Lab ID	Client ID	Sample date	Description	Result	Reporting Limit	Comments
C 685570	01A	8/25/21	Light Blue Paint on Cement (Interior)	0.35	0.019	
C 685571	01B	8/25/21	Light Blue Paint on Cement (Interior)	0.30	0.037	
C 685572	02A	8/25/21	Exterior Brown Paint on Cement	0.10	0.025	
C 685573	02B	8/25/21	Exterior Brown Paint on Cement	0.10	0.032	
C 685574	03A	8/25/21	Red Paint on Plaster (Interior)	0.28	0.021	
C 685575	03B	8/25/21	Red Paint on Plaster (Interior)	0.34	0.021	
C 685576	04A	8/25/21	Brown Paint on Wood Interior	0.40	0.039	
C 685577	04B	8/25/21	Brown Paint on Wood Interior	0.55	0.011	
C 685578	05A	8/25/21	White Paint on Wood Wall by Entrance	<RL	0.034	
C 685579	05B	8/25/21	White Paint on Wood Wall by Entrance	<RL	0.022	

Simona Peavey, Tech. Manager Chemistry
Aimee Cormier, Lab Director

Unless otherwise indicated, all samples were received in acceptable condition.
All results apply only to the samples tested and as received and are accurate to no more than three significant figures.
Unless otherwise indicated, all the quality control criteria for the method above have been met.
RL-Reporting Limit(%by weight) Note on units: mg/Kg is the same as ppm by weight.
RL-Reporting Limit; Defined as the lowest concentration the laboratory can accurately quantitate.

Please visit our website at www.proscience.net for the current accreditation status.

ProScience Analytical Services, Inc.
22 Cummings Park, Woburn, MA 01801

Telephone: 781-935-3212
Facsimile: 781-932-4857
Email: chemistry@proscience.net

Laboratory Report

Contact: Dan Roy
Client: Atlas Technical Consultants, LLC
Address: 10 State St., Suite 100
Woburn, MA 01801

Batch #: C 308417
Date received: 8/25/2021
Date analyzed: 8/26/2021
Date of report: 8/26/2021

Project # N/A
P.O.# N/A
Project Site: City of Worcester
151 Plantation Street, Worcester, MA

AIHA-LAP, LLC Lab ID 102754

Lead Analysis In Paint Using SOP Based on SW846-7000B/3051
Results in weight percent on an "as received" weight basis

Lab ID	Client ID	Sample date	Description	Result	Reporting Limit	Comments
C 685580	06A	8/25/21	Dark Blue Paint on Wood by Entrance	0.098	0.020	
C 685581	06B	8/25/21	Dark Blue Paint on Wood by Entrance	0.14	0.031	
C 685582	07A	8/25/21	Blue Paint on Wood Wall (Interior)	4.3	0.028	
C 685583	07B	8/25/21	Blue Paint on Wood Wall (Interior)	9.0	0.022	

Simona Peavey, Tech. Manager Chemistry
Aimee Cormier, Lab Director

Unless otherwise indicated, all samples were received in acceptable condition.
All results apply only to the samples tested and as received and are accurate to no more than three significant figures.
Unless otherwise indicated, all the quality control criteria for the method above have been met.
RL-Reporting Limit(%by weight) Note on units: mg/Kg is the same as ppm by weight.
RL-Reporting Limit; Defined as the lowest concentration the laboratory can accurately quantitate.

Please visit our website at www.proscience.net for the current accreditation status.

ProScience Analytical Services, Inc.
Chemistry Chain of Custody Record

LABORATORY/HEADQUARTERS
22 Cummings Park, Woburn, MA 01801
T:781-935-3212 F:781-932-4857
Atlas-Woburn
www.proscience.net
general@proscience.net

Turn Around Time Requested: ☐ Rush/<6 Hours | Same Day ☐ | Next Day ☒ | 2 Day ☐ | 3 Day ☐ | 5 Days ☐

Client: City of Worcester

Address Street: 151 Plantation Street
Town: Worcester State/Zip: MA

Project Site Line 1: Project Number:
Line 2: PO:

Contact: Dan.Boyce@atlas.com Eric.Nunes@atlas.com
Phone: 484-844-0504
FAX:
Alt/Pager:

☐ NELAC analysis

TYPE OF ANALYSIS (circle)

DUST WIPES	PAINT (0.1 g)	SOIL (1 g)
AIR	TSP	TCLP (100g)
(min)	PM10	Other

Please use a separate form for each matrix.

Element: gravimetric
Pb Cd Cr As Fe
Se Ag Ba Hg
Other (please specify under Comments)

For Laboratory Use
BATCH NUMBER: C308417
☐ QC

☐ ASTM E1792

FOR LABORATORY USE ONLY

Date and Time Sampled	Field I.D.	Sample Description/Location	Air Sampling Information: Start Time	End Time	Start Flowrate	End Flowrate	Volume (liters)	Wiped area: length (inch)	width (inch)	Area (sq in)	ANALYSIS: Weight (grams)	Dil'n	AA/ ICP Reading	RESULT	Lab I.D.
8/25/21	01A	Light Blue Paint on cement (interior)													085570
	01B	"													71
	02A	Exterior Brown paint on cement													72
	02B	"													73
	03A	Red Paint (interior) on Plaster													74
	03B	"													75
	04A	Brown Paint on wood interior													76
	04B	"													77
	05A	White Paint on woodwall by entrance													78
	05B	"													79

Relinquished By: [signature] Pamela Caulfield-Cole
Date: 8/25/21 8/25/21 Time: 2:25

Received By:
Date: Time:

Comments:

ver 5.5

PAGE 1 OF 2

Field blanks are required for air and wipe samples per the sampling method and should be from the same source lot as was used for the collected field samples.
Proscience Analytical Services reserves the right to subcontract samples to an appropriately accredited laboratory when we are unable to perform the analysis in house.

ProScience Analytical Services, Inc.
Chemistry Chain of Custody Record

LABORATORY/HEADQUARTERS
22 Cummings Park, Woburn, MA 01801
T:781-935-3212 F:781-932-4857

www.proscience.net
general@proscience.net

Rush/<6 Hours — Turn Around Time Requested

Same Day	Next Day	2 Day	3 Day	5 Days
	X			

Client: City of Worcester

Address — Street: 151 Plantation Street
Town: Worcester — State/Zip: MA

Project Site — Line 1 / Line 2 — Project Number / PO

Contact: Dan.Roy@oneatlas.com
Ric.Nunes@oneatlas.com

Phone: 484-844-0504
FAX
Alt/Pager

☐ NELAC analysis

TYPE OF ANALYSIS (circle)

DUST WIPES	PAINT (0.1 g)	SOIL (1 g)
AIR	TSP	TCLP (100g)
(min)	PM10	Other

Please use a separate form for each matrix.

Element — gravimetric
(Pb) Cd Cr As Fe
Se Ag Ba Hg
Other (please specify under Comments)

For Laboratory Use
BATCH NUMBER: C 308417

☐ QC

☐ ASTM E1792

FOR LABORATORY USE ONLY

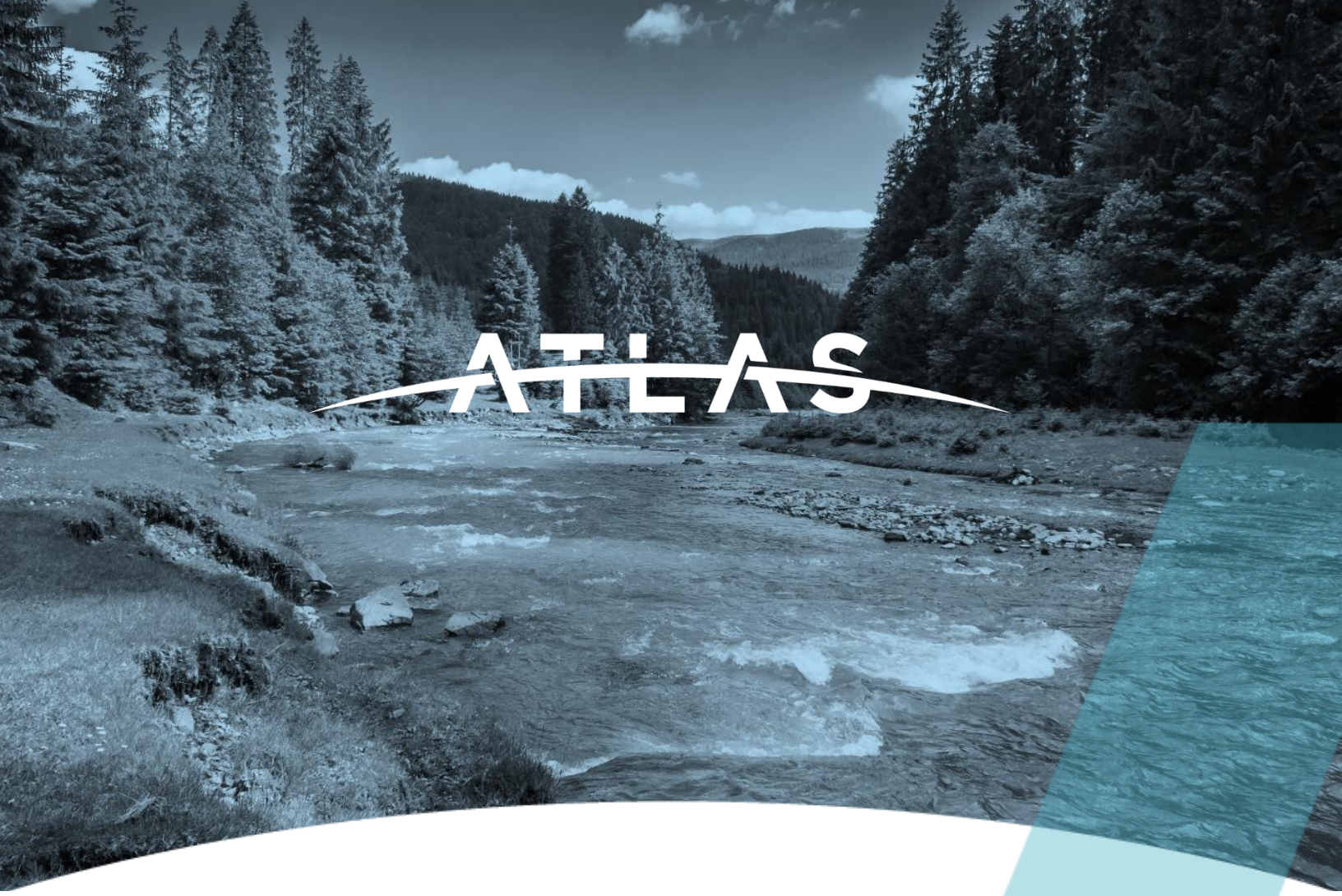
Date and Time Sampled	Field I.D.	Sample Description/Location	Air Sampling Information: Start Time	End Time	Start Flowrate	End Flowrate	Volume (liters)	Wiped area: length (inch)	width (inch)	Area (sq in)	ANALYSIS: Weight (grams)	Dil'n	AA/ ICP Reading	RESULT	Lab I.D.
8/25/21	06A	Dark Blue Paint on wood by entrance													80
	06B	"													81
	07A	Blue Paint on wood wall (interior)													82
	07B	"													83

Relinquished By: David Roy — Date: 8/25/21 — Time:
Received By: — Date: — Time:

Comments:

ver 5.5

Field blanks are required for air and wipe samples per the sampling method and should be from the same source lot as was used for the collected field samples.
Proscience Analytical Services reserves the right to subcontract samples to an appropriately accredited laboratory when we are unable to perform the analysis in house.



HAZARDOUS BUILDING MATERIALS INSPECTION REPORT

41 COLUMBIA STREET
WORCESTER, MASSACHUSETTS
ATLAS PROJECT 6000005912

PREPARED FOR:

Ms. Amanda M. Wilson, MPA
Director of Housing and Health Inspections
Department of Inspectional Services
City of Worcester
25 Meade Street
Worcester. Massachusetts

PREPARED BY:

Atlas Technical Consultants LLC
10 State Street, Suite 100
Woburn, Massachusetts 01801

September 13, 2021

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APPENDICES

Appendix I Asbestos Bulk Sample Analysis Results By PLM

Appendix II Lead Paint Chip Analysis Report

1.0 EXECUTIVE SUMMARY

ATC Group Services dba Atlas Technical Consultants (Atlas) was retained by the City of Worcester to perform a hazardous building materials survey to support the demolition of the building, located at 41 Columbia Street, Worcester, Massachusetts. Atlas understands that the building is scheduled to be demolished. The inspection was performed in accordance with Atlas Proposal 21-11613, dated July 26, 2021.

Atlas's scope of work included a survey for asbestos containing materials (ACM) and lead containing paints throughout the building.

1.1 ASBESTOS

Section 2.0 discusses the ACM survey and sampling methodology. This survey involved a visual inspection and collection of the suspect building materials. In consideration that the building is scheduled for demolition, Atlas performed limited exploratory demolition to identify hidden ACMs.

The asbestos survey was performed by Massachusetts Division of Labor Standards (DLS) certified Asbestos Inspector, Mr. Daniel Roy (AI-900970), on August 26, 2021. A total of sixty-two (62) samples of suspect ACM were collected with fifty-nine (59) analyzed to determine asbestos content. The Atlas inspector performed both the visual inspection and bulk sampling in the building according to methods outlined in the U.S. Environmental Protection Agency (EPA) guidance document titled, "Guidance for Controlling Asbestos-Containing Materials in Buildings" (Document No. 560/5-85/024). Please find the Asbestos Identification Laboratory (AIL) Polarized Light Microscopy (PLM) bulk sample results included as Appendix A.

1.2 LEAD DETERMINATION

Atlas performed a lead paint determination on representative locations of the building. The lead paint testing was performed by collecting paint chip samples. Paint chip samples were submitted to ProScience Analytical Services for analysis in accordance with EPA method SW846—3050B/7000B. ProScience is an AIHA-LAP Certified Laboratory with lab ID number: 102754.

Results of the lead determination indicated that locations throughout the building will be impacted by the upcoming project was found to contain a detectable level of lead. Table 2, found in Section 3.2 presents the findings of Atlas's lead determination.

LIMITATIONS

Our professional services have been performed, our findings obtained and our recommendations prepared in accordance with customary principles and practices in the field of environmental science and engineering. This statement is in lieu of other statements either expressed or implied. This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated.

Environmental evaluations are limited in the sense that conclusions and recommendations are developed and information obtained from limited research and secondary sources. Except as set forth in this report, Atlas has made no independent investigations as to the accuracy or completeness of the information derived from the secondary sources and personal interviews and has presumed that such information was accurate and complete.

This report is intended for the sole use of City of Worcester. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or re-use of this document or the findings, conclusions, or recommendations, is at risk of said user.

CERTIFICATION OF RESULTS

This report has been prepared for the exclusive use of City of Worcester. Photocopying of this document by parties other than those designated by the Client, or use of this document for purposes other than it is intended, is prohibited.

Respectfully submitted 13th day of September, 2021.

Atlas Technical Consultants LLC

Ricardo Nunes
Senior Project Manager
For ATC Group Services dba Atlas
Office:781-404-1345
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2.0 ASBESTOS CONTAINING MATERIALS SURVEY

2.1 Sampling Methodology

The asbestos survey was performed by Massachusetts Division of Labor Standards (DLS) certified Asbestos Inspector, Mr. Daniel Roy (AI-900970), on August 26, 2021. Bulk samples, representing individual homogenous areas of suspect materials were collected in a randomly distributed manner, in accordance with the methods outlined below.

Building materials exist in the form of thermal systems insulation (TSI), surfacing materials, and miscellaneous materials.

The following generally illustrates the sampling strategy employed by Atlas where feasible:

(a) Surfacing materials - In a randomly distributed manner, collect bulk samples of surfacing materials, representative of each homogeneous area, and not assumed to be ACM.

(1) Collect at least three bulk samples from each homogeneous area that is less than or equal to 1,000 ft^2.
(2) Collect at least five bulk samples from each homogeneous area that is greater than 1,000 ft^2, but less than or equal to 5,000 ft^2.
(3) Collect at least seven bulk samples from each homogeneous area that is greater than 5,000 ft^2.

(b) Thermal systems insulation.

(1) In a randomly distributed manner, collect at a minimum, three (3) bulk samples of thermal systems insulation material, representative of each homogeneous area, and not assumed to be ACM.
(2) Collect, at a minimum, one (1) bulk sample of patched thermal systems insulation, representative of each homogenous area, and not assumed to be ACM, providing the section of patch was less than 6 linear or square feet.
(3) Collect, at a minimum, three (3) representative bulk samples of each insulated mechanical system not assumed to be ACM, including, but not limited to cementitious material used on pipe fittings such as tees, elbows, or valves. Representative sampling was conducted in a manner sufficient as to identify whether each homogenous area is either asbestos or non-asbestos containing.
(4) Bulk samples are not required to be collected from any homogeneous area where the accredited asbestos inspector has determined that the thermal systems insulation is a non-suspect material (i.e., fiberglass, foam glass, rubber, or any other non-ACM).

(c) Miscellaneous materials - Collect, at a minimum, two (2) representative bulk sample of each miscellaneous material not assumed to be ACM, including, but not limited to ceiling tiles, floor tiles, associated floor tile mastic, roofing materials, waterproofing, etc. Representative sampling was conducted in a manner sufficient as to identify whether each homogenous area is either asbestos or non-asbestos containing.

2.2 Asbestos-Containing Materials

Atlas conducted the asbestos survey in areas associated with the upcoming demolition project of the building located at 41 Columbia St., Worcester, Massachusetts. This survey involved a visual inspection and collection of the suspect building materials. In consideration that the building is scheduled for demolition, Atlas performed limited exploratory demolition to identify hidden ACMs. Asbestos bulk sample analysis results are located in Appendix A.

PLM Bulk sample analysis indicated that the following materials identified and sampled by Atlas were found to contain asbestos:

- Pipe Insulation
- Black Tar Associated with Red Asphalt Shingle
- Black Tar Associated with Black Asphalt Shingle

None of the other materials identified and sampled by Atlas were found to contain asbestos.

The following table presents a list of the identified, confirmed ACMs in the garage building. Note, ACM is identified by the Mass DEP as any material or product containing one (1) percent or greater asbestos by weight.

Table 1 – Summary of Identified Asbestos-Containing Materials
41 Columbia Street
Worcester, Massachusetts

Location	Material	Estimated Quantity	Result
Basement	Pipe Insulation	50 ln ft	60%
Roof	Black Tar Associated with Black And Red Asphalt Shingle	2,000 sq ft	2%

The following table lists the suspect materials identified that were sampled and determined to be non-ACM.

Table 2 – Summary of Non Asbestos-Containing Materials
41 Columbia Street
Worcester, Massachusetts

Material	Sample Location(s)
Gypsum Wall Board	Kitchen, Living Room
Joint Compound	Kitchen, Living Room
Yellow Cove Base Mastic	Living Room
White Speckled Vinyl Floor Tile	Rear Bathroom
Tan Mastic Associated with White Speckled Vinyl Floor Tile	Rear Bathroom
Tan Vinyl Floor Tile	Living Room
Clear Mastic Associated with Tan Vinyl Floor Tile	Living Room
Marbled Tan Vinyl Sheet Flooring	Back Entrance
Clear Mastic Associated with Marbled Tan Vinyl Floor Tile	Back Entrance
Tan with Red Pattern Vinyl Sheet Flooring	Back Entrance
Textured Ceiling	Kitchen, Bedroom

2 x 2 Ceiling Tile	Rear Bathroom
1 x 1 Ceiling Tile	Living Room
Grey Vinyl Floor Tile	2nd Floor Bathroom
Tan Glue Daubs on Fiber Reinforced Panel	2nd Floor Bathroom
Plaster	Living Room Wall, Living Room Ceiling, 1st Floor Hallway, Front Room Wall, Front Room Ceiling, 2nd Floor Hallway Wall, 2nd Floor Hallway Ceiling
Blown-in Insulation	Living Room, By Entrance, 1st Floor Stairwell, 2nd Floor Stairwell, 2nd Floor Hallway, 2nd Floor Bedroom, 2nd Floor Back Stairwell
Stone Block Grout	Basement
Brick Work Grout	Basement
Paper Vapor Barrier	Exterior Wall
Red Asphalt Shingle	Roof
Black Asphalt Shingle	Roof
Paper Vapor Barrier	Roof

2.3 Analytical Method

Samples were placed in labeled containers, which were sealed and submitted to the laboratory for analysis. Bulk samples of suspect materials were analyzed by Asbestos Identified Laboratory (AIL) of Woburn, Massachusetts, by means of the EPA-approved polarized light microscopy with dispersion staining (PLM/DS) method using the visual estimation technique for asbestos quantification. AIL is fully accredited for bulk sample analysis under the National Voluntary Laboratory Accreditation Program (NVLAP), administered by the National Institute of Standards and Technology, and is also licensed by the Massachusetts DLS (License Nos. AA-000208). Bulk samples were analyzed for asbestos content using EPA Method 600/R-93/116. The visual estimation technique was used to quantify asbestos concentrations. The PLM/DS analytical method is modeled after 40 CFR Part 763, Subpart F, Appendix A: "Interim Method for the Determination of Asbestos in Bulk Insulation Samples." If a material contains 1% asbestos or greater, it is considered to be asbestos-containing material. Upon client request, or at the recommendation of the analyst, the 'Point Counting Method' may be used to verify the presence/absence of asbestos when a sample contains less than 10% asbestos by visual estimate.

2.4 Consideration for Hidden Materials

Atlas conducted the asbestos survey in areas associated with the upcoming demolition project of the building located at 41 Columbia St., Worcester, Massachusetts. This survey involved a visual inspection and collection of the suspect building materials. In consideration that the building is scheduled for demolition, Atlas performed limited exploratory demolition to identify hidden ACMs.

Atlas recommends if a suspect material has not been positively identified, but is similar in mode of occurrence or physical properties as other identified ACM, it should be considered asbestos containing. Only through further sampling and analysis should a suspect material be identified as non-asbestos.

2.5 Recommendations

Atlas understands that demolition activities are planned for this project. All identified ACM that will be impacted by the planned demolition project should be properly removed and disposed of by a Commonwealth of Massachusetts licensed Asbestos Contractor prior to disturbance.

Atlas recommends that precautions be taken to prevent unauthorized disturbance of identified ACM in this report.

Atlas also recommends the following as part of the abatement process:

- Although the asbestos contractor is required to follow the requirements outlined in Federal, Massachusetts State, and local regulations regarding asbestos during any abatement project, Atlas recommends the development of a project specification and the use of project oversight to ensure compliance with all applicable regulations as well as protect the interest of the client for all abatement work performed at the Site. The project specification shall reference the regulations pertinent to each project, including those work procedures that shall be followed by asbestos abatement personnel.

- As part of each abatement contractor bidding process, a unit price schedule for the abatement of asbestos-containing materials should be established. The unit price schedule should include costs for those materials identified within this report, as well as those materials that may potentially be uncovered during renovation/demolition activities. Included should be unit prices for the removal of asbestos-containing materials (e.g., floor tile, floor tile mastic, gray duct sealant), as well as those non-asbestos-containing materials, which may be asbestos contaminated (i.e. carpeting, plywood, etc.).

- Project oversight will provide City of Worcester with on-site technical expertise during all phases of the abatement work. Project oversight provides a constant management of the abatement project to ensure that all identified asbestos-containing materials are removed in accordance with all applicable regulations and to prevent an asbestos fiber release. Tasks performed during project oversight should include periodic work inspections to ensure that all procedures employed by the abatement contractor are acceptable, and air monitoring around each work area to detect elevated asbestos fiber levels.

3.0 LEAD PAINT DETERMINATION

Atlas performed a limited lead-containing paint (LCP) determination on representative paints that will be impacted by the upcoming demolition project. The lead determination was performed by Atlas's Lead Paint Inspector, Mr. Daniel Roy. Paint chip samples were submitted to ProScience Analytical Services, Inc. for analysis in accordance with EPA method SW846—7000B/3051. ProScience is an AIHA-LAP Certified Laboratory with lab ID number: 102754. Paint Chip analysis results are located in Appendix B.

3.1 Summary of Findings

The table below provides the results of the lead paint testing. The Flame AAS readings are expressed in percent weight (% wt.).

Table 3 – Lead Paint Results
41 Columbia Street
Worcester, Massachusetts

SAMPLE NUMBER	LOCATION	SUBSTRATE	COLOR	FLAME AAS RESULT (%WEIGHT)
01A	2nd Floor Bedroom	Wood	Brown	**0.027**
01B	2nd Floor Bedroom	Wood	Brown	**8.93**
02A	2nd Floor Bedroom	Wood	White	**0.275**
02B	2nd Floor Bedroom	Wood	White	**2.71**
03A	2nd Floor Bedroom	Plaster	Yellow	**<RL**
03B	2nd Floor Bedroom	Plaster	Yellow	**<RL**

<RL – Below Reporting Limit

3.2 Regulatory Implications and Regulations

The implications of lead paint existing in a non-residential building are related to the future use of the facility and the need to impact these painted surfaces during the repainting process.

The Occupational Safety and Health Administrative (OSHA) does not acknowledge any quantitative threshold for a lead-based paint. Paint with a detectable amount of lead, regardless of the level, is recognized as a lead-containing paint. The possible exposure hazard to workers impacting these coated surfaces should be assessed and contractors and their employees must adhere to the OSHA Lead in Construction standard found at 29 CFR 1926.62.

OSHA recognizes that construction type work on surfaces coated with lead-containing paint has a **potential** to expose workers to hazardous levels of lead and requires that appropriate safety and health measures be followed as stated in 29 CFR 1926.62. OSHA states that until the employer performs an exposure assessment and documents that employees are not exposed above the permissible exposure limit (PEL) of greater than 50 micrograms per cubic meter (µg/m^3) of air, the employer must treat employees as if they were exposed above the PEL for the following operations:

- Manual renovation and demolition of structures, manual scraping, manual sanding, and use of heat gun where lead-containing coatings or paints are present;
- Abrasive blasting;
- Power tool cleaning;

- Lead burning;
- Using lead-containing mortar or spray painting with lead-containing paint;
- Abrasive blasting, rivet busting, or welding, cutting, or burning on any structure where lead-containing coatings or paint are present;
- Cleanup activities where dry expendable abrasives are used; and
- Any other task the employer believes may cause exposure in excess of the PEL.

Work precautions include providing respiratory protection, protective work clothing and equipment, change areas, hand washing facilities, biological monitoring, and training until an exposure assessment has determined that the work activity will result in an exposure below the PEL. Additional requirements under this standard include a written compliance program as well as record keeping.

APPENDIX A

ASBESTOS BULK SAMPLE ANALYSIS RESULTS BY PLM

Asbestos Identification Laboratory.

165 New Boston St., Ste 227
Woburn, MA 01801
781-932-9600

Web: www.asbestosidentificationlab.com Email: mikemanning@asbestosidentificationlab.com

NVLAP® Testing Lab Code: 200919-0

Batch: 68353

Daniel Roy
Atlas Technical Services, Woburn
10 State Street
Suite 100
Woburn, MA 01801

Project Information

41 Columbia St.,
Worcester,
MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

Dear Daniel Roy,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project. The Analysis Method is BULK PLM ANALYSIS, EPA/600/R-93/116The information and analysis contained in this report have been generated using the EPA /600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials. Materials or products that contain more than 1% of any kind or combination of asbestos are considered an asbestos containing building material as determined by the EPA. This Polarized Light Microscope (PLM) technique may be performed either by visual estimation or point counting. Point counting provides a determination of the area percentage of asbestos in a sample. If the asbestos is estimated to be less than 10% by visual estimation of friable material, the determination may be repeated using the point counting technique. The results of the point counting supersede visual PLM results. Results in this report only relate to the items tested. This report may not be used by the customer to claim product endorsement by NVLAP or any other U.S. Government Agency.
Laboratory results represent the analysis of samples as submitted by the customer. Information regarding sample location, description, area, volume, etc., was provided by the customer. Asbestos Identification Laboratory is not responsible for sample collection activities or analytical method limitations. Unless notified in writing to return samples, Asbestos Identification Laboratory discards customer samples after 30 days. Samples containing subsamples or layers will be analyzed separately when applicable. Reports are kept at Asbestos Identification Laboratory for three years. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

- NVLAP Lab Code: 200919-0
- Massachusetts Certification License: AA000208
- State of Connecticut, Department of Public Health Approved Environmental Laboratory Registration Number: PH-0142
- State of Maine, Department of Environmental Protection Asbestos Analytical Laboratory License Number: LB-0078(Bulk) LA-0087(Air)
- State of Rhode Island and Providence Plantations. Department of Health Certification: AAL-121
- State of Vermont, Department of Health Environmental Health License AL934461

Thank you Daniel Roy for your business.

Michael Manning
Owner/Director

Daniel Roy
Atlas Technical Services, Woburn
10 State Street
Suite 100
Woburn, MA 01801

Project Information

41 Columbia St.,
Worcester,
MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
01A / 758973	Gypsum Board	Kitchen	gray	Cellulose 10 Non-Fibrous 90	None Detected
01B / 758974	Gypsum Board	Living Room	gray	Cellulose 10 Non-Fibrous 90	None Detected
02A / 758975	Joint Compound	Kitchen	white	Non-Fibrous 100	None Detected
02B / 758976	Joint Compound	Living Room	white	Non-Fibrous 100	None Detected
03A / 758977	Yellow Cove Base Mastic	Living Room	yellow	Cellulose 5 Non-Fibrous 95	None Detected
03B / 758978	Yellow Cove Base Mastic	Living Room	yellow	Cellulose 5 Non-Fibrous 95	None Detected
04A / 758979	White Speckled Vinyl Floor Tile	Rear Bathroom	white	Non-Fibrous 100	None Detected
04B / 758980	White Speckled Vinyl Floor Tile	Rear Bathroom	white	Non-Fibrous 100	None Detected
05A / 758981	Tan Mastic Assoc. w/ 04A	Rear Bathroom	multi	Non-Fibrous 100	None Detected
05B / 758982	Tan Mastic Assoc. w/ 04B	Rear Bathroom	multi	Non-Fibrous 100	None Detected
06A / 758983	Tan Vinyl Floor Tile	Living Room	tan	Non-Fibrous 100	None Detected
06B / 758984	Tan Vinyl Floor Tile	Living Room	tan	Non-Fibrous 100	None Detected
07A / 758985	Clear Mastic Assoc. with 06A	Living Room	multi	Cellulose 5 Non-Fibrous 95	None Detected
07B / 758986	Clear Mastic Assoc. w/ 06B	Living Room	multi	Cellulose 5 Non-Fibrous 95	None Detected
08A / 758987	Marbled Tan Vinyl Sheet Flooring	Back Entrance	gray	Non-Fibrous 100	None Detected
08B / 758988	Marbled Tan Vinyl Sheet Flooring	Back Entrance	gray	Non-Fibrous 100	None Detected

Sampled: August 26, 2021 **Received:** August 26, 2021 **Analyzed:** August 27, 2021

Friday 27 August 2021

Analyzed by: 

Batch: 68353

Daniel Roy
Atlas Technical Services, Woburn
10 State Street
Suite 100
Woburn, MA 01801

Project Information

41 Columbia St.,
Worcester,
MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
09A 758989	Clear Mastic Assoc. w/ 08A	Back Entrance	clear	Cellulose 5 Non-Fibrous 95	None Detected
09B 758990	Clear Mastic Assoc. w/ 08B	Back Entrance	clear	Cellulose 5 Non-Fibrous 95	None Detected
10A 758991	Tan with Red Pattern Vinyl Sheet Flooring	Back Entrance	black	Non-Fibrous 100	None Detected
10B 758992	Tan with Red Pattern Vinyl Sheet Flooring	Back Entrance	black	Non-Fibrous 100	None Detected
11A 758993	Textured Ceiling	Kitchen	white	Non-Fibrous 100	None Detected
11B 758994	Textured Ceiling	Bedroom	multi	Non-Fibrous 100	None Detected
12A 758995	2'x2' Ceiling Tile	Rear Bathroom	gray	Fiberglass 20 Mineral Wool 30 Cellulose 40 Non-Fibrous 10	None Detected
12B 758996	2'x2' Ceiling Tile	Rear Bathroom	gray	Fiberglass 20 Mineral Wool 30 Cellulose 40 Non-Fibrous 10	None Detected
13A 758997	1'x1' Ceiling Tile	Living Room	brown	Mineral Wool 20 Cellulose 70 Non-Fibrous 10	None Detected
13B 758998	1'x1' Ceiling Tile	Living Room	brown	Mineral Wool 20 Cellulose 70 Non-Fibrous 10	None Detected
14A 758999	Grey Vinyl Floor Tile	2nd Fl. Bathroom	gray	Non-Fibrous 100	None Detected
14B 759000	Grey Vinyl Floor Tile	2nd Fl. Bathroom	gray	Non-Fibrous 100	None Detected
15A 759001	Fiber Reinforced Panel Tan Glue Daubs	2nd Fl. Bathroom	yellow	Non-Fibrous 100	None Detected
15B 759002	Fiber Reinforced Panel Tan Glue Daubs	2nd Fl. Bathroom	yellow	Non-Fibrous 100	None Detected
16A 759003	Plaster	Living Room Wall	gray	Hair 5 Non-Fibrous 95	None Detected

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MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
16B 759004	Plaster	Living Room Ceiling	gray	Hair 5 Non-Fibrous 95	None Detected
16C 759005	Plaster	1st Floor Hallway	gray	Hair 5 Non-Fibrous 95	None Detected
16D 759006	Plaster	Front Room Wall	gray	Hair 5 Non-Fibrous 95	None Detected
16E 759007	Plaster	Front Room Ceiling	multi	Hair 2 Non-Fibrous 98	None Detected
16F 759008	Plaster	2nd Floor Hallway Wall	gray	Hair 3 Non-Fibrous 97	None Detected
16G 759009	Plaster	2nd Floor Hallway Ceiling	multi	Hair 5 Non-Fibrous 95	None Detected
17A 759010	Blown-in Insulation	Living Room	brown	Cellulose 95 Non-Fibrous 5	None Detected
17B 759011	Blown-in Insulation	By Entrance	brown	Cellulose 95 Non-Fibrous 5	None Detected
17C 759012	Blown-in Insulation	1st Floor Stairwell	brown	Cellulose 95 Non-Fibrous 5	None Detected
17D 759013	Blown-in Insulation	2nd Floor Stairwell	brown	Cellulose 95 Non-Fibrous 5	None Detected
17E 759014	Blown-in Insulation	2nd Floor Hallway	brown	Cellulose 95 Non-Fibrous 5	None Detected
17F 759015	Blown-in Insulation	2nd Floor Bedroom	brown	Cellulose 95 Non-Fibrous 5	None Detected
17G 759016	Blown-in Insulation	2nd Floor Back Stairwell	brown	Cellulose 95 Non-Fibrous 5	None Detected
18A 759017	Pipe TSI	Basement	gray	Cellulose 10 Non-Fibrous 30	**Detected** **Chrysotile 60**
18B 759018	Pipe TSI	Basement			Not Analyzed
19A 759019	Stone Block Grout	Basement	gray	Non-Fibrous 100	None Detected

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Woburn, MA 01801

Project Information

41 Columbia St.,
Worcester,
MA

Method: BULK PLM ANALYSIS, EPA/600/R-93/116

FieldID / LabID	Material	Location	Color	Non-Asbestos %	Asbestos %
19B 759020	Stone Block Grout	Basement	gray	Non-Fibrous 100	None Detected
20A 759021	Brick Work Grout	Basement	gray	Non-Fibrous 100	None Detected
20B 759022	Brick Work Grout	Basement	gray	Non-Fibrous 100	None Detected
21A 759023	Paper Vapor Barrier	Exterior Wall	gray	Cellulose 80 Non-Fibrous 20	None Detected
21B 759024	Paper Vapor Barrier	Exterior Wall	gray	Cellulose 80 Non-Fibrous 20	None Detected
22A 759025	Red Shingle Asphalt	Roof	black	Cellulose 20 Non-Fibrous 80	None Detected
22B 759026	Red Asphalt Shingle	Roof			Not Analyzed
23A 759027	Black Tar Assoc. w/ 22A	Roof	black	Cellulose 50 Non-Fibrous 48	**Detected** **Chrysotile 2**
23B 759028	Black Tar Assoc. w/ 22B	Roof			Not Analyzed
24A 759029	Black Asphalt Shingle	Roof	black	Cellulose 20 Non-Fibrous 80	None Detected
24B 759030	Black Asphalt Shingle	Roof	black	Cellulose 20 Non-Fibrous 80	None Detected
25A 759031	Black Tar Assoc. w/ 24A	Roof	black	Cellulose 50 Non-Fibrous 48	**Detected** **Chrysotile 2**
25B 759032	Black Tar Assoc. w/ 24B	Roof			Not Analyzed
26A 759033	Paper Vapor Barrier	Roof	black	Cellulose 70 Non-Fibrous 30	None Detected
26B 759034	Paper Vapor Barrier	Roof	black	Cellulose 70 Non-Fibrous 30	None Detected

Sampled: August 26, 2021 **Received:** August 26, 2021 **Analyzed:** August 27, 2021

Friday 27 August 2021

Analyzed by: **Batch:** 68353

Client: Atlas
Address: 10 State St Suite 100 Woburn MA
Project Site & #: 41 Columbia St Worcester MA
Phone / email address: Ric.Nunes@oneatlas.com
484-844-0504 Daniel.Roy@oneatlas.com
Contact: Daniel Roy
Relinquish by/date: Daniel Roy 8/26/21
Received by/date: 8/26/21
# of Samples Received: 62

CHAIN OF CUSTODY

EPA/600/R-93/116

Asbestos Identification Lab
165 New Boston St.
Suite 227
Woburn, MA 01801
(781)932-9600
www.asbestosidentificationlab.com

Date Sampled:

BATCH# 68353 Rev 06/16

Page 1 of 13

Turnaround Time: [ ] Less 3 Hrs [ ] Same Day [X] Next Day [ ] Two Day

Sample Method: [X] Bulk [ ] Soil [ ] Wipe [ ] Point Count

Stop on 1st Positive? (Yes)/No

Notify Method: Mail/E-Mail/Verbal

Anayzed By:

Date: 8/27/21

Temp in Celsius = 23

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
758973	01A	Material Gypsum Board Location Kitchen	0	Grey	n	sl	s	Chrysotile															
								Amosite															
								Crocidolite											R				
								Tremolite															90
								Anthophyllite											10				
								Actinolite															
74	01B	Material Location Living Room	0	grey	n	sl	s	Chrysotile															
								Amosite															
								Crocidolite											R				
								Tremolite															90
								Anthophyllite											10				
								Actinolite															
75	02A	Material Joint Compound Location Kitchen	0	white	n	sl	s	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															100
								Actinolite															

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
76	02B	Material: Joint Compound Location: Living Room	C	white	g	g	s	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															100
								Anthophyllite															
								Actinolite															
77	03A	Material: Yellow Cove Base Mastic Location: Living Room	C	yellow	g	g	n	Chrysotile															
								Amosite															
								Crocidolite											R				
								Tremolite															
								Anthophyllite											5				95
								Actinolite															
78	03B	Material Location	C	yellow	g	g	n	Chrysotile															
								Amosite															
								Crocidolite											2				
								Tremolite															
								Anthophyllite											5				95
								Actinolite															
79	04A	Material: White Speckled Vinyl Floor Tile Location: Rear Bathroom	C	white	g	g	n	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															100
								Actinolite															
80	04B	Material Location	C	white	g	g	n	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite		—													100
								Actinolite															

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope					Asbestos Minerals	Optical Properties						RI		Non-Asbestos Percentage (%)						
			% of Asbestos	Color	Homogeneity	Texture	Friable		Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	II	⊥	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
81	05A	Material: Tan Mastic assoc. w/ 04A Location: Rear Bathroom	C	purple	g	g	n	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															100
82	05B	Material: Tan mastic assoc. w/ 04B Location:	C	purple	g	g	n	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															1a
83	06A	Material: Tan Vinyl Floor Tile Location: Living Room	C	tan	g	g	n	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															10
84	06B	Material: Location:	C	tan	g	g	n	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															1a
85	07A	Material: Clear mastic assoc. with 06A Location:	C	purple	g	g	n	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite		—													
								Actinolite															95

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
86	07B	Material Clear Mastic assoc. w/ 06B Location	0	multi	g	g	n	Chrysotile																
								Amosite																
								Crocidolite											2					
								Tremolite																
								Anthophyllite											5					95
								Actinolite																
87	08A	Material Marbled Tan Vinyl Sheet Flooring Location Back Entrance	0	grey	g	g	n	Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophyllite																la
								Actinolite																
88	08B	Material Location	0	grey	g	g	n	Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophyllite																la
								Actinolite																
89	09A	Material Clear Mastic assoc. w/ 08A Location	0	clear	g	g	n	Chrysotile																
								Amosite																
								Crocidolite											2					
								Tremolite																
								Anthophyllite											5					95
								Actinolite																
90	09B	Material Clear Mastic assoc. w/ 08B Location	0	clear	g	g	n	Chrysotile																
								Amosite																
								Crocidolite											1					
								Tremolite																
								Anthophyllite		—									5					95
								Actinolite																

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope					Asbestos Minerals	Optical Properties						RI		Non-Asbestos Percentage (%)						
			% of Asbestos	Color	Homogeneity	Texture	Friable		Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	II	⊥	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
91	10A	Material Tan with Red Pattern Vinyl Sheet Flooring Location Back Entrance	0	Black	g	s	r	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															100
92	10B	Material Location	0	Black	g	g	r	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															100
93	11A	Material Textured Ceiling Location Kitchen	c	white	g	g	g	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															100
94	11B	Material Location Bedroom	c	multi	g	g	g	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															100
95	12A	Material 2'x2' Ceiling Tile Location Rear Bathroom	0	gray	r	g/f	r	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite		—							20	30	40				10
								Actinolite															

PA

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = ____ Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
96	12B	Material 2'x2' Ceiling Tile Location Rear Bathroom	0	gray	~	sft	r	Chrysotile															
								Amosite															
								Crocidolite									I	I	R				
								Tremolite															
								Anthophyllite									20	30	40				10
								Actinolite															
97	13A	Material 1'x1' Ceiling Tile Location Living Room	0	Brown	g	f	r	Chrysotile															
								Amosite															
								Crocidolite										I	R				
								Tremolite															
								Anthophyllite										20	70				10
								Actinolite															
98	13B	Material Location	0	Brown	g	f	r	Chrysotile															
								Amosite															
								Crocidolite										I	R				
								Tremolite															
								Anthophyllite										20	70				10
								Actinolite															
99	14A	Material Grey Vinyl Floor Tile Location 2nd Fl Bathroom	0	gray	g	s	r	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															10
								Actinolite															
00	14B	Material Location	0	gray	g	g	r	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite		—													10
								Actinolite															

Temp in Celcius = ~

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
01	15A	Material Fiber Reinforced Panel Tan Glue Lumps Location 2nd Fl Bathroom	0	~	~	~	~	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															100
02	15B	Material Location	0	~	~	~	~	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															100
03	16A	Material Plaster Location Living Room Wall	0	~	~	~	~	Chrysotile															
								Amosite															
								Crocidolite												C			
								Tremolite															
								Anthophyllite												5			
								Actinolite															95
04	16B	Material Location Living Room Ceiling	0	~	~	~	~	Chrysotile															
								Amosite															
								Crocidolite												C			
								Tremolite															
								Anthophyllite												5			
								Actinolite															95
05	16C	Material Location 1st Floor Hallway	0	~	~	~	~	Chrysotile															
								Amosite															
								Crocidolite												C			
								Tremolite															
								Anthophyllite		—										5			
								Actinolite															95

Temp in Celcius = 21

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
06	16D	Material: Plaster Location: Front Room Wall	0	Gy	~	Sm	Fy	Chrysotile															
								Amosite															
								Crocidolite												C			
								Tremolite												5			95
								Anthophyllite															
								Actinolite															
07	16E	Material Location: Front Room Ceiling	0	We	~	Sm	Fy	Chrysotile															
								Amosite															
								Crocidolite												C			
								Tremolite												2			98
								Anthophyllite															
								Actinolite															
08	16F	Material Location: 2nd Floor Hallway Wall	0	Gy	~	Sm	Fy	Chrysotile															
								Amosite															
								Crocidolite												C			
								Tremolite												3			97
								Anthophyllite															
								Actinolite															
09	16G	Material Location: 2nd Floor Hallway Ceiling	0	We	~	Sm	Fy	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite												L			
								Anthophyllite												5			95
								Actinolite															
10	17A	Material: Blown in insulation Location: Living Room	0	Br	~	Fy		Chrysotile															
								Amosite															
								Crocidolite												2			
								Tremolite															
								Anthophyllite		—										95			5
								Actinolite															

Temp in Celcius = 21

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
11	17B	Material: Blown in Insulation Location: By Entrance	0	Br	W	Fy		Chrysotile											82				
								Amosite															
								Crocidolite															
								Tremolite											85				5
								Anthophyllite															
								Actinolite															
12	17C	Material Location: 1st Floor Stairwell	0	Br	W	Fy		Chrysotile											92				
								Amosite															
								Crocidolite															
								Tremolite											91				5
								Anthophyllite															
								Actinolite															
13	17D	Material Location: 2nd Floor Stairwell	0	Br	W	Fy		Chrysotile											92				
								Amosite															
								Crocidolite															
								Tremolite											95				5
								Anthophyllite															
								Actinolite															
14	17E	Material Location: 2nd Floor Hallway	0	Br	W	Fy		Chrysotile											92				
								Amosite															
								Crocidolite															
								Tremolite											95				5
								Anthophyllite															
								Actinolite															
15	17F	Material Location: 2nd Floor Bedroom	0	Br	W	Fy		Chrysotile											92				
								Amosite															
								Crocidolite															
								Tremolite											95				5
								Anthophyllite		—													
								Actinolite															

Temp in Celcius = ~1

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
16	17G	Material: Blown in Insulation Location: 2nd Floor Back Stairwell	0	Br	W	R	Y	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite											12				
								Anthophyllite											8			5	
								Actinolite															
17	18A	Material: Pipe TSI Location: Basement	0	Gy	W	R	Y	Chrysotile	60	W	Z	+	C	~	NW	NY							
								Amosite															
								Crocidolite															
								Tremolite											12				
								Anthophyllite											8			30	
								Actinolite															
18	18B	Material: Pipe TSI Location: Basement						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															
19	19A	Material: Stone, Block Grout Location: Basement	0	Gy	Y	W	W	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															10
								Actinolite															
20	19B	Material: " Location: "	0	Gy	Y	W	W	Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite		—													10
								Actinolite															

DUP

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Temp in Celcius = 4 / Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: II	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
21	20A	Material: Brick work Grout Location: Basement	0	Br	y	Sm		Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophyllite																10
								Actinolite																
22	20B	Material Location	0	Br	y	Sm		Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophyllite																
								Actinolite																10
23	21A	Material: Paper Vapor barrier Location: Exterior Wall	0	gy	W	R	W	Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophyllite												8				20
								Actinolite																
24	21B	Material Location	0	gy	W	R	W	Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophyllite												8				20
								Actinolite																
25	22A	Material: Red Shingle asphalt Location: Roof	0	Blk	W	Sm	W	Chrysotile																
								Amosite																
								Crocidolite																
								Tremolite																
								Anthophyllite		—										20				8
								Actinolite																

Temp in Celcius = 21

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ‖	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
26	22B	Material: Red Asphalt Shingle. Location: Roof						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															
27	23A	Material: Black Tar Assoc. w/ 22A. Location: Roof	0	blk	N	F	N	Chrysotile	~~2~~	~~W~~	~~=~~	~~+~~	~~L~~	~~N~~	~~1.55~~	~~1.551~~			~~R~~ ~~80~~ 50				~~15~~ 48
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															
28	23B	Material: Black Tar Assoc. w/ 22B. Location: Roof						Chrysotile															
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															
29	24A	Material: Black Asphalt Shingle. Location: Roof	0	blk	N	F	N	Chrysotile											R 20				80
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															
30	24B	Material: ⟶ Location: ⟶	0	blk	N	F	N	Chrysotile											R 20				80
								Amosite															
								Crocidolite															
								Tremolite															
								Anthophyllite															
								Actinolite															

EG

DNA

EC

Lab ID# (Lab Use Only)	Field ID/ (Client Reference)	Material / Location (Temp in Celcius = ___)	Stereo Scope: % of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Optical Properties: Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ‖	RI: ⊥	Non-Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
31	25A	Material: Black Tar assoc. w/ 24A	0	Bn	~	[illegible] ~		Chrysotile	~	~	=	/	~	~	[illegible]	[illegible]							
								Amosite															
								Crocidolite											R				
		Location: Roof						Tremolite															
								Anthophyllite											50				~~50~~ 48 EG-
								Actinolite															
32	25B	Material: Black Tar assoc. w/ 24B	~~0~~	~~[illegible]~~	~~~~	~~[illegible]~~		Chrysotile															
								Amosite															
								Crocidolite											~~R~~				EG-
		Location: Roof						Tremolite											~~50~~				~~50~~ DUA
								Anthophyllite															
								Actinolite															
33	26A	Material: Paper Vaper Barrier	0	blk	~	[illegible]		Chrysotile															
								Amosite															
								Crocidolite											R				
		Location: Roof						Tremolite															
								Anthophyllite											70				30
								Actinolite															
759034	26B	Material: (same as above)	0	bn	~	[illegible]		Chrysotile															
								Amosite															
								Crocidolite											R				
		Location: (same as above)						Tremolite															
								Anthophyllite											70				30
								Actinolite															
		Material						Chrysotile															
								Amosite															
								Crocidolite															
		Location						Tremolite															
								Anthophyllite															
								Actinolite															

APPENDIX B

LEAD PAINT CHIP ANALYSIS RESULTS

ProScience Analytical Services, Inc.
22 Cummings Park, Woburn, MA 01801

Telephone: 781-935-3212
Facsimile: 781-932-4857
Email: chemistry@proscience.net

Laboratory Report

Contact: Daniel Roy
Client: Atlas Technical Consultants, LLC
Address: 10 State St., Suite 100
Woburn, MA 01801

Batch #: C 308425
Date received: 8/26/2021
Date analyzed: 8/27/2021
Date of report: 8/27/2021

Project # N/A
P.O.# N/A
Project Site: 41 Columbia St.
Worcester, MA

AIHA-LAP, LLC Lab ID 102754

Lead Analysis In Paint Using SOP Based on SW846-7000B/3051
Results in weight percent on an "as received" weight basis

Lab ID	Client ID	Sample date	Description	Result	Reporting Limit	Comments
C 685660	01A	8/26/21	Top Layer Brown Paint over White Paint on Wood / 2nd Floor Bedroom	0.027	0.012	
C 685661	01B	8/26/21	Top Layer Brown Paint over White Paint on Wood / 2nd Floor Bedroom	8.93	0.013	
C 685662	02A	8/26/21	Bottom Layer White Paint on Wood / 2nd Floor Bedroom	0.275	0.022	
C 685663	02B	8/26/21	Bottom Layer White Paint on Wood / 2nd Floor Bedroom	2.71	0.024	
C 685664	03A	8/26/21	Yellow Paint on Plaster / 2nd Floor Bedroom	<RL	0.020	
C 685665	03B	8/26/21	Yellow Paint on Plaster / 2nd Floor Bedroom	<RL	0.012	

Sydny Strong for

Simona Peavey, Tech. Manager Chemistry
Aimee Cormier, Lab Director

Unless otherwise indicated, all samples were received in acceptable condition.
All results apply only to the samples tested and as received and are accurate to no more than three significant figures.
Unless otherwise indicated, all the quality control criteria for the method above have been met.
RL-Reporting Limit(%by weight) Note on units: mg/Kg is the same as ppm by weight.
RL-Reporting Limit; Defined as the lowest concentration the laboratory can accurately quantitate.

Please visit our website at www.proscience.net for the current accreditation status.

ProScience Analytical Services, Inc.

Chemistry Chain of Custody Record

LABORATORY/HEADQUARTERS
22 Cummings Park, Woburn, MA 01801
T:781-935-3212 F:781-932-4857

www.proscience.net
general@proscience.net

Turn Around Time Requested: ☐ Rush/<6 Hours ☐ Same Day ☒ Next Day ☐ 2 Day ☐ 3 Day ☐ 5 Days

Client: Atlas
Address Street: 10 State St. Suite 100
Town: Woburn State/Zip: MA
Project Site Line 1: 41 Columbia St. Worcester MA Project Number:
Line 2: PO:
Contact: Daniel. Roy@oneatlas.com; Ric. Nunes@oneatlas.com
Phone: 484-844-0504
FAX:
Alt/Pager:

☐ NELAC analysis

TYPE OF ANALYSIS (circle)

DUST WIPES	(PAINT (0.1 g))	SOIL (1 g)
AIR	TSP	TCLP (100g)
(min)	PM10	Other

Please use a separate form for each matrix.

Element: (Pb) Cd Cr As Fe; Se Ag Ba Hg — gravimetric
Other (please specify under Comments)

☐ QC

For Laboratory Use — BATCH NUMBER: C 308425

☐ ASTM E1792 — FOR LABORATORY USE ONLY

Date and Time Sampled	Field I.D.	Sample Description/Location	Air Sampling Information: Start Time	End Time	Start Flowrate	End Flowrate	Volume (liters)	Wiped area: length (inch)	width (inch)	Area (sq in)	Analysis: Weight (grams)	Dil'n	AA/ICP Reading	RESULT	Lab I.D.
8/26/21	01A	Top Layer Brown Paint over White paint on Wood/2nd Fl BedRm													685660
	01B	↓													61
	02A	Bottom Layer White paint on Wood 2nd Floor BedRoom													62
	02B	↓													63
	03A	Yellow Paint on Plaster 2nd Floor BedRoom													64
	03B	↓													65

Relinquished By: Daniel Roy Date: 8/26/21 Time:
Received By: [signature] Cote Date: 8/26/21 Time: 3:00

Comments:

ver 5.5

PAGE 1 OF 1

Field blanks are required for air and wipe samples per the sampling method and should be from the same source lot as was used for the collected field samples.
Proscience Analytical Services reserves the right to subcontract samples to an appropriately accredited laboratory when we are unable to perform the analysis in house.