

LIMITED SURVEY REPORT
FOR
ASBESTOS-CONTAINING MATERIALS,
LEAD-BASED PAINT
AND
MISCELLANEOUS HAZARDOUS MATERIALS

20 Pelham Road School
20 Pelham Road
Lexington, Massachusetts 02460

September 11, 2015

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ECMS Project No. 1009.068

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CERTIFICATION OF RESULTS

This limited assessment was conducted on behalf of and for the exclusive use of *DiNisco Design Partnership, Limited* and all its successors and assigns, solely for use in an environmental evaluation of the Site. This report and the findings contained herein shall not, in whole or in part, be disseminated or conveyed to any other party, nor used by any other party, in whole or in part, other than *DiNisco Design Partnership, Limited* and all its successors and assigns, without the prior written consent of *Environmental & Construction Management Services, Inc.*

Respectfully submitted this 11th day of September, 2015.

For *Environmental & Construction Management Services, Inc.* by:

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Holly C. Drum
Environmental Scientist

Stephen T. Weydt

Stephen T. Weydt
Principal Environmental Scientist

EXECUTIVE SUMMARY

Environmental & Construction Management Services, Inc. (ECMS) was retained by *DiNisco Design Partnership, Limited* to conduct a limited survey of the **20 Pelham Road School** located at 20 Pelham Road in Lexington, Massachusetts. The purpose of the survey was to identify, sample and assess the condition of materials suspected to be asbestos-containing (ACM), Lead Based Paint (LBP) and Miscellaneous Hazardous Materials within accessible interior building areas. Sampling was limited to those materials that would have the largest potential remediation cost. This limited survey does not provide sufficient information to perform renovation or demolition. It is understood that prior to renovation or demolition, a comprehensive assessment will be conducted.

The survey work described in this report was conducted for *DiNisco Design Partnership, Limited* in accordance with *ECMS'* proposal number EC15-046 dated August 28, 2015. This work was performed in conformance with the scope and limitations of the proposal, and the regulations governing the work.

This report describes the survey methodology; laboratory analytical results and provides recommendations for abatement action prior to building renovation or demolition. The investigation included a limited inspection of the Site and sampling the Site for the presence of asbestos. The survey revealed the following:

Asbestos-Containing Material

ECMS performed a limited survey to identify ACM at the **20 Pelham Road School** on September 2 and 3, 2015. The following materials were confirmed to contain asbestos based upon bulk sample analytical results:

- Mastic associated w/ all floor tiles (multiple colors and sizes)
- Boiler packing insulation
- Boiler exhaust insulation
- Tank insulation
- Pipe insulation associated with emergency generator
- Exhaust Insulation associated with emergency generator
- "Mudded" pipe fitting insulation
- Insulation associated with ducts
- Sink condensate
- "Transite" panels associated with interior and exterior windows
- Caulking/glazing associated with windows

The following materials were tested and are considered not to contain asbestos:

- 2'x2' ceiling tile pin dot & fissure
- 1'x1' spline ceiling tile dots
- Ceiling plaster
- Wall plaster
- Skim coat on plaster

- Cove bases and associated mastics
- Floor expansion joint
- Pipe wrap over fiberglass
- Black mastic associated with pipe wrap on fiberglass

ECMS observed asbestos-containing materials (ACM) materials in the boiler room that was in a significant state of disrepair. Based upon this observation, and current regulatory requirements, ECMS recommends the following:

1. The boiler room have access immediately restricted to only those persons that have been properly trained in accordance with the OSHA Asbestos Standard for the Construction Industry (29 CFR 1910.1101).
2. The boiler room should be cleaned and have all damaged ACM repaired by workers trained in accordance with 29 CFR 1910.1101.
3. In accordance with the OSHA Asbestos Standard for the Construction Industry (29 CFR 1910.1101) and the OSHA Hazard Communication Standard (29 CFR 1200) as well as the Asbestos Hazard Emergency Response Act (AHERA-40 CFR 763), signs should be posted at the entrances to the boiler room, and labels affixed to each asbestos-containing material.

Lead Based Paint Results

A limited survey for lead-based paint was conducted at the **20 Pelham Road School** on September 3, 2015. The survey included accessible surfaces of the building interior, exterior and common areas. For the survey, ECMS utilized X-ray fluorescence (XRF) analysis. The instrument utilized for the survey was the Alpha Series Metal Analyzer manufactured by the Innov-X Systems, Inc. of Woburn, Massachusetts.

Upon arrival at the job site, a "validation test" was performed to ensure that the instrument was operating properly. The validation test was performed on a calibration test strip affixed to the front of the unit supplied by the manufacturer to determine if the instrument measured the lead content consistently on a day-to-day basis.

In conducting the LBP survey at 20 Pelham Road School, representative tests were conducted on homogeneous (similar color, texture, and use) painted surfaces. Analysis results from these surfaces were applied to other surfaces possessing identical homogeneous characteristics. By following this sampling protocol, every painted surface did not have to be sampled.

In general, measurable amounts of lead (0.1 mg/cm² or greater) were positively identified on various surfaces located throughout the school.

The lead containing paint on these components throughout the building is generally in undamaged (<5% damage) condition.

Contractors should be made aware of the presence of lead-based paint so that they can properly protect their workers, address the testing and disposal of this material (as required), and properly comply with all applicable regulations. Specifically, Contractors are required to comply with all applicable OSHA regulations including 29 CFR 1926.62, "Lead Exposure in Construction: Interim Final Rule" and 29 CFR 1926.59, "Hazard Communication for the Construction Industry". Also, any applicable pre-disposal testing requirements of receiving or disposal facilities for the construction debris should be identified and complied with. The planned facility for the receipt of construction debris should also be identified. See Section 4.5 for specific recommendations.

Hazardous Materials Inspection Results

ECMS surveyed the the **20 Pelham Road School** for hazardous materials that may require special handling or disposal. Empty containers (5-gallon buckets, jugs, pails, etc.) observed in the building were not included in the survey tally, and should be handled as general solid waste during demolition. Although ECMS inventoried existing chemicals (cleaners, oils, laboratory chemicals, etc), the hazardous materials inventory does not include costing to dispose of these items, as they are likely to be re-used instead of disposed of. Refrigerant inventory includes coolers and refrigerators that are likely to be re-used.

Elevators, Transformers, Emergency Generators

No elevators or transformers were observed inside the school during the survey. A non-functioning emergency generator was observed during the survey, all oils should be packaged and disposed or recycled in a proper manner.

ECMS recommends that a Phase I Environmental Site Assessment be conducted in order to determine if other oil or hazardous materials (OHM) exist.

Freon/Refrigerants

Freon containing building components (coolers, refrigerators and window air conditioners) was surveyed during the inspection. These materials should be packaged and disposed or recycled in a proper manner.

ECMS observed 5 wall mounted bubblers, 1 walk-in fridge/freezer, and 6 fridge/freezers throughout the school.

Mercury Containing Materials

Over 3,410 linear feet (LF) of fluorescent light tubes (4-foot bulbs), over 230 linear feet (LF) florescent tubes (2 foot bulbs) were identified. Mercury switches or thermostats were observed in mechanical spaces and the boiler room during the survey.

Fluorescent light tubes potentially contain mercury and lead, and must be disposed of in accordance with EPA's Universal Waste Rule, as well as local and State regulations.

Fluorescent Light Components

Approximately 460 light fixture ballasts were identified. No sampling of light ballast capacitors, transformers, or switchgear was performed as part of this investigation.

ECMS not examine ballasts during the survey; however, each ballast should be evaluated during renovations and appropriately handled as either a PCB or non-PCB containing.

Lead Acid Batteries

Lead acid batteries usually found in exit signs, battery back-up components for computers, and in emergency lighting. These materials should be packaged and disposed or recycled in a proper manner.

ECMS observed a total of 11 exit signs during the survey. Batteries were observed in the boiler room and one associated with the emergency generator.

1.0 PURPOSE AND SCOPE OF WORK

1.1 Purpose

Environmental & Construction Management Services, Inc. (ECMS) was retained by *DiNisco Design Partnership, Limited* to conduct a limited survey of the **20 Pelham Road School** located at 20 Pelham Road in Lexington, Massachusetts. The purpose of the survey was to identify, sample and assess the condition of materials suspected to be asbestos-containing (ACM), Lead Based Paint (LBP) and Miscellaneous Hazardous Materials within accessible interior building areas. Sampling was limited to those materials that would have the largest potential remediation cost. This limited survey does not provide sufficient information to perform renovation or demolition. It is understood that prior to renovation or demolition, a comprehensive assessment will be conducted.

This survey report presents survey results for ACM, LBP and Miscellaneous Hazardous Materials. Section 3.0 discusses all aspects of the asbestos phase of the survey including survey methodologies, findings and recommendations. Section 4.0 similarly discusses all aspects of the lead-based paint survey and Section 5.0 discusses the Miscellaneous Hazardous Materials survey results.

Copies of supporting documentation, including asbestos bulk sample analytical results, are provided in the appendices of this report.

1.2 Special Terms and Conditions

The survey work described in this report was conducted for *DiNisco Design Partnership, Limited* in accordance with *ECMS'* proposal number EC15-046 dated August 28, 2015. This work was performed in conformance with the scope and limitations of the proposal, and the regulations governing the work.

1.3 Limitations and Exceptions of Assessment

The limited survey was conducted in accordance with federal and state regulatory requirements, as well as standard industry practices. It should be noted that while every attempt was made to identify and sample suspect materials, the potential for additional materials to be encountered during renovation or demolition exists. *ECMS* was not tasked with performing a comprehensive assessment. *ECMS* recommends that a post-vacancy survey be conducted utilizing destructive means, prior to any building renovation or demolition activities.

2.0 PROPERTY DESCRIPTION

2.1 *Location and Description of the Site*

The Site is located at 20 Pelham Road in Lexington, Massachusetts and is an unoccupied former Armenian Sisters' Academy pre-school, elementary and middle school. The school was constructed in 1959.

The exterior of the building is one-story brick construction, with a basement level where the boiler room is located. The interior construction is primarily plaster and CMU block walls and plaster ceilings. Interior areas include classrooms, administrative offices, library and a gymnasium. Additional improvements to the site include a parking lot.

3.0 ASBESTOS-CONTAINING MATERIAL (ACM) SURVEY

3.1 *Survey Personnel and Analytical Laboratory*

Ms. Holly C. Drum conducted the survey. Ms. Drum is an experienced licensed asbestos inspector (Massachusetts Asbestos Inspector # AI000094).

All samples collected were submitted to *Asbestos Identification Lab (AIL)* in Woburn, MA utilizing industry standard chain-of-custody procedures. Samples were analyzed in accordance with the methodology described below.

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 (NIST). Copies of the NIST (NVLAP) accreditation certificates are included in Appendix C. In addition, the laboratory is licensed by the Massachusetts Department of Labor Standards (DLS). All bulk samples were analyzed for asbestos content using the Environmental Protection Agency's (EPA) Method 600/M4-82-920: "Interim Method for The Determination of Asbestos in Bulk Insulation Samples". The visual estimation technique was used to quantify all reported asbestos concentrations (unless otherwise noted).

3.2 *ACM Survey Methodology*

For the purposes and objectives of this survey, the following definitions are provided: suspect asbestos materials, presumed asbestos materials homogeneous applications of suspect materials, friable materials, inaccessible building areas, and confirmed asbestos-containing materials:

1. Suspect Materials: Installed building materials that either were pre-formed (i.e., manufactured off-site) or were prepared and installed on-site. For this survey, the following materials were considered non-suspect and were not assessed or sampled if observed:

- Plastic
 - Glass
 - Wood or Wood Composite Materials
 - Brick, Granite, Marble, or Other Stonework
 - Paint (unless textured)
 - Clay or Ceramic Tiles
 - Rubber or Synthetic Foam
 - Carpeting, Curtains, Wallpaper, and Other Paper or Natural Fiber, Fabric, or Synthetic Goods
 - Pink or Yellow fiberglass Insulation on Pipes or Other Mechanical Components
 - Concrete or Mortar
2. Presumed Materials: Installed building materials that either were observed but not accessible, or not observed but presumed to be present based upon the age and construction of the building.
 3. Homogeneous Applications or Areas: An area of surfacing material, thermal system insulation material or miscellaneous material that is uniform in color or texture (as defined in U.S. EPA regulation 40 CFR 763 – Asbestos Hazard Emergency Response Act (AHERA)). Homogeneity is a determining factor in calculating the number of bulk samples collected for a particular material.
 4. Friable Materials: Suspect materials that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure (e.g., sprayed fireproofing as opposed to a non-friable material such as vinyl floor tile) (as defined in the AHERA regulation).
 5. Inaccessible Building Areas: Building areas, systems, structural components, or surfaces which could not be observed because it was unsafe or impractical to demolish, disassemble, or remove systems or coverings, or because a human being cannot physically enter or observe the area or component.
 6. Confirmed Asbestos-Containing Materials: Are suspect materials where at least one (1) of the collected bulk samples contained an asbestos concentration of 1% or more. According to EPA/AHERA criteria, all bulk samples of a homogeneous area of suspect ACM must be found to contain less than 1% asbestos to conclude that OSHA or EPA does not regulate the material as ACM under the asbestos NESHAP regulation.

3.2.1 Survey Methodology

Although not a comprehensive assessment, this limited survey was conducted in general accordance with the EPA Asbestos Hazard Emergency Response Act (AHERA) regulation and the National Emission Standards for Hazardous Air Pollutants (NESHAP). This included:

1. Performing a walk through and visual inspection of accessible building areas to locate, identify and quantify building materials suspected to contain asbestos.
2. Following the visual inspection of the building, a limited list of suspect asbestos containing materials was developed and a sampling methodology established to ensure that suspect materials were tested and the proper numbers of samples were collected.
3. Representative samples of suspect building materials were collected and submitted for analysis.
4. Bulk samples were analyzed using the EPA Polarized Light Microscopy with Dispersion Staining (PLM/DS) method with visual estimation of any resulting asbestos concentrations.
5. Laboratory analytical results were reviewed to ensure proper and consistent identification and characterization of all ACM.
6. *ECMS* was not tasked with performing a comprehensive assessment. It is presumed that a variety of suspect materials exist in the building that were not identified by this limited assessment.

3.2.2 Sampling Protocol

The number of bulk samples collected depended on the type of identified suspect material. According to the EPA/AHERA regulation, materials may be classified as surfacing (i.e., applied to a surface), thermal (i.e., providing thermal insulation), or miscellaneous. The number of samples required increases as the potential for either a non-uniform mixture or poor asbestos distribution in the material increases.

Initially, one sample of each installed homogeneous material was analyzed. If this first sample was found to contain asbestos, the remaining samples were not analyzed. If the first sample was found not to contain asbestos, then the remaining samples were analyzed.

In addition, in some cases, where flooring materials were secured with mastic, and the mastic was found to contain asbestos, the flooring materials were not analyzed. In this manner, sampling and analysis minimized analytical costs without compromising the integrity of the survey findings.

Specific suspect materials identified in the building included the following:

- Mastic associated w/ all floor tiles (multiple colors and sizes)
- Boiler packing insulation
- Boiler exhaust insulation
- Tank insulation
- Pipe insulation associated with emergency generator
- Exhaust Insulation associated with emergency generator
- “Mudded” pipe fitting insulation
- Insulation associated with ducts
- Sink condensate
- “Transite” panels associated with interior and exterior windows
- Caulking/glazing associated with windows
- 2’x2’ ceiling tile pin dot & fissure
- 1’x1’ spline ceiling tile dots
- Ceiling plaster
- Wall plaster
- Skim coat on plaster
- Cove bases and associated mastics
- Floor expansion joint
- Pipe wrap over fiberglass
- Black mastic associated with pipe wrap on fiberglass

Initially, one (1) sample of each installed homogeneous material was submitted to the laboratory for analysis. If this first sample result was found to contain asbestos (positive), the remaining samples were not submitted. If this first sample result was found not to contain asbestos (negative), then the remaining samples were submitted for analysis. In this manner, sampling and analysis minimized analytical costs without compromising the integrity of the survey findings.

3.3 ACM Survey Limitations

ECMS was not tasked with performing a comprehensive assessment. It is presumed that a variety of suspect materials exist in the building that were not identified by this limited assessment.

Areas that were inaccessible during the survey are as follows:

Plumbing Chases/Trenches/Wet Walls – During our inspection, pipe chases and pipe trenches were noted in many areas of the building. Due to the scope of the survey, *ECMS* did not access all identified chases. It is likely that pipe and fitting insulation is present in these chases. *ECMS* identified pipe trenches and access hatches in classroom. These materials should be sampled comprehensively during the Post Vacancy Survey.

Flooring – ECMS observed several areas where updates to the building have created multiple layers of flooring. Where possible, ECMS assessed all layers of flooring. Some areas, most notably under carpeting over existing resilient flooring. In addition, terracotta floors were observed in several areas throughout the building, suspect materials such as mastic and paper may exist below this flooring. These materials should be sampled comprehensively during the Post Vacancy Survey.

Boiler Room – ECMS observed damaged asbestos containing TSI in the boiler room and accessed crawl spaces. In addition, possible contaminated areas which include soil and furniture exist and should be addressed additional areas may exist which were not accessed during this survey. Interior boiler components, fire doors and vibration dampening cloth were not sampled during this survey as no destructive sampling occurred. These materials should be sampled comprehensively during the Post Vacancy Survey.

Windows – ECMS positively identified asbestos window caulking/glazing and “Transite” window panels but additional suspect material may exist.

Exterior Building Envelope and Roof – ECMS did not perform destructive demo as part of this survey. Additional suspect materials (damp proofing, foundation sealer, seam caulking, skylight caulking/glazing, roofing materials, etc.) may exist. These materials should be identified and sampled comprehensively during the Post Vacancy Survey.

Miscellaneous – ECMS observed speaker boxes in the classroom, suspect mastic could line these, chalk boards, glue daubs associated with mirrors, bathroom stalls, “Transite” panels behind air handling units, mastic associated with walk-in cooler, exhaust hood in the kitchen, glass block and elevated window caulk/glazing were not sampled during this survey as no destructive sampling occurred. These materials should be sampled comprehensively during the Post Vacancy Survey.

3.4 Asbestos Survey Findings

Analysis of the samples collected during this survey confirmed that the following materials contain asbestos:

- Mastic associated w/ all floor tiles (multiple colors and sizes)
- Boiler packing insulation
- Boiler exhaust insulation
- Tank insulation
- Pipe insulation associated with emergency generator
- Exhaust Insulation associated with emergency generator
- “Mudded” pipe fitting insulation
- Insulation associated with ducts
- Sink condensate
- “Transite” panels associated with interior and exterior windows
- Caulking/glazing associated with windows

Thermal System Insulation:

Visible pipes throughout the building were insulated with fiberglass (non-ACM) and “mudded” fitting insulation. Pipe fitting insulation, boiler packing, exhaust insulation, duct wrap insulation, emergency generator pipe and exhaust insulation, various tank insulation were identified as asbestos containing. Pipe wrap and black mastic associated with fiberglass pipes, located throughout the building was tested and identified as not asbestos containing.

It should be noted that the interior boiler components, fire doors and vibration dampening cloth were inaccessible at the time of the survey and could not be completely accessed or evaluated. Additional testing should be conducted post vacancy to identify and sample any suspect material.

Surfacing Materials:

Wall and ceiling plaster were sampled and found not to contain asbestos.

Miscellaneous Materials:

Various floor tiles, 9”x9” and 12”x12” contaminated with mastic, sink condensate, “Transite” window panels, window caulk/glazing were sampled and found to be asbestos containing.

Additionally, 2’x2’ and 1’x1’ ceiling tiles, ceiling/wall plaster, skim coat, cove base and mastic were tested and identified as not asbestos containing.

In addition to the above listed materials confirmed to contain asbestos several suspect materials were not sampled so as to not impact operational systems. These suspect materials should be considered suspect until post vacancy sampling can be conducted. These materials are fire brick associated with boiler, speaker boxes in the classroom, suspect mastic could line these, chalk boards, glue daubs associated with mirrors, bathroom stalls, “Transite” panels behind air handling units, mastic associated with walk-in cooler, and exhaust hood in the kitchen, multiple layers of flooring (most notably below carpet), additional suspect window material, roofing, foundation mastic, building envelope, glass block and elevated window caulk/glazing..

A summary of identified asbestos containing, presumed asbestos-containing and non-asbestos containing materials is found in the Tables Subsections 3.4.1 and 3.4.2 below. Copies of laboratory reports are included in Appendix A. As discussed above, suspect ACMs that could not be sampled at the time of the survey because of site conditions (e.g., not accessible, building damage) should be presumed to contain asbestos until subsequent sampling proves otherwise.

Summary of Asbestos-Containing Materials

TABLE 3.4.1 SUMMARY OF ASBESTOS CONTAINING MATERIALS			
Material Description	Location	Asbestos Type/Concentration %	Estimated Quantity
9"x9"/12"x12" Floor Tiles* & Mastic**	Nursery Room, Nursery Bedroom, Cafeteria, Gym Storage, Girl's Dress, Boy's Dress, Stage Storage, Café Storage, Faculty Room, Secretary, Hallways, Principal, Nurse, Library, Science, First Grade, Kindergarten, Nursery B, Second Grade, Religion, Art, Third Grade, Storage, Utility, SS/French, Teacher's, Math, Armenian, Language, Kitchen Storages, Gymnasium, Gym/Stage, Gym Storage	Chrysotile/10%	40,000 SF
Boiler Packing Insulation***	Boiler Room	Chrysotile/5%, Amosite/35%	2 EA @16CY
Boiler Exhaust Insulation	Boiler Room	Chrysotile/90%	800 SF
Tank Insulation	Boiler Room	Chrysotile/35%, Amosite/5%	3 EA @100SF
Pipe Insulation	Emergency Generator	Chrysotile/35%, Amosite/10%	50LF
Exhaust Insulation	Emergency Generator	Chrysotile/25%, Amosite/25%	60SF
"Mudded" Pipe Fitting Insulation	Throughout Including Crawlspace & Trenches	Chrysotile/5%	800 EA
Duct Wrap Insulation	Boiler Room & Mechanical Space	Chrysotile/60%	575 SF
Sink Condensate	Nursery Room, Library, Science, First Grade, Kindergarten, Nursery B, Second Grade, Third Grade, SS/French, Teacher's, Math, Armenian, Language	Chrysotile/10%	12 EA
"Transite" Panels/Caulking/Glazing	Windows/Doors	Chrysotile/2-10%	10,000 SF

*Material considered contaminated by asbestos containing mastic

**Material maybe concealed below carpet

***Quantity includes the boiler as a whole



Summary of Non Asbestos-Containing Materials

TABLE 3.4.2 SUMMARY OF NONASBESTOS CONTAINING MATERIALS 1929 BUILDING	
Material Description	Location
2'x2' ceiling tile pin dot & fissure	Throughout
1'x1' spline ceiling tile dots	Throughout
Ceiling plaster	Throughout
Wall plaster	Throughout
Skim coat on plaster	Throughout
Cove bases and associated mastics	Throughout
Floor expansion joint	Boiler Room
Pipe wrap over fiberglass	Throughout
Black mastic associated with pipe wrap on fiberglass	Throughout

This limited survey does not provide sufficient information to perform renovation or demolition. It is understood that prior to renovation or demolition, a comprehensive assessment will be conducted.

3.5 Recommendations

ECMS recommends that all materials identified as being asbestos containing be removed by a licensed asbestos removal Contractor prior to being impacted by demolition or renovation activities.

This limited survey does not provide sufficient information to perform renovation or demolition. It is understood that prior to renovation or demolition, a comprehensive assessment will be conducted. Prior to or during the preliminary design phase, or as the occupied areas become vacant, a Post Vacancy Survey should be conducted to further identify, quantify and assess materials presumed to contain asbestos and to access areas that were not accessible during the investigative survey.

ECMS observed asbestos-containing materials (ACM) materials in the boiler room that were in a significant state of disrepair. Based upon this observation, and current regulatory requirements, ECMS recommends the following:

1. The boiler room have access immediately restricted to only those persons that have been properly trained in accordance with the OSHA Asbestos Standard for the Construction Industry (29 CFR 1910.1101).
2. The boiler room should be cleaned and have all damaged ACM repaired by workers trained in accordance with 29 CFR 1910.1101.
3. In accordance with the OSHA Asbestos Standard for the Construction Industry (29 CFR 1910.1101) and the OSHA Hazard Communication Standard (29 CFR 1200) as well as the Asbestos Hazard Emergency Response Act (AHERA-40 CFR 763), signs should be posted at the entrances to the boiler room, and labels affixed to each asbestos-containing material.

MassDEP regulations require that each owner/operator comply with the following procedures to prevent visible or particulate emissions to ambient air:

- Remove any asbestos-containing material from a facility or facility component prior to demolition/renovation operations if such operations will cause asbestos emissions, or will render the asbestos-containing material friable, or will prevent access to the asbestos-containing material for subsequent containment and removal;
- When a facility component covered or coated with asbestos-containing material is being removed as units or in sections:
 - Adequately wet asbestos-containing material exposed during the removal operations;
 - Lower the units or sections to the ground level so as to not cause airborne emissions of asbestos; and

- Ensure no release of asbestos to the ambient air space during removal of asbestos from these units or sections handled so as to ensure:
 - Maintaining adequate wetness of the asbestos-containing material, and
 - Sealing the work area and using a local exhaust ventilation and collection system designed and operated to capture particulate asbestos material. This system must exhibit no visible or particulate emissions to the outside air and be designed and operated in accordance with the requirements of 7.15(1)(d), Air Cleaning;
- When asbestos-containing material is being removed from a facility component the following procedures shall be performed:
- Ensure that such material is adequately wet;
 - Contain the material *in situ* of the facility component;
 - Lower the contained material carefully to the ground so as to prevent emissions;
- Once the asbestos-containing materials have been removed and wetted, ensure that the material remains wet until and after it is sealed into a container for disposal.

4.0 LEAD BASED PAINT (LBP) SURVEY

4.1 *LBP Survey Methodology and Results*

The survey for lead-based paint was conducted by Ms. Holly Drum, an experienced building materials inspector.

4.1.1 *XRF Testing Procedures*

For the survey, *ECMS* utilized X-ray fluorescence (XRF) analysis. The instrument utilized for the survey was the Alpha Series Metal Analyzer manufactured by the Innov-X Systems, Inc. of Woburn, Massachusetts.

Upon arrival at the job site, a "validation test" was performed to ensure that the instrument was operating properly. The validation test was performed on a calibration test strip affixed to the front of the unit supplied by the manufacturer to determine if the instrument measured the lead content consistently on a day-to-day basis.

In conducting the LBP survey at 20 Pelham Road School, representative tests were conducted on homogeneous (similar color, texture, and use) painted surfaces. Analysis results from these surfaces were applied to other surfaces possessing identical homogeneous characteristics. By following this sampling protocol, every painted surface did not have to be sampled.

4.1.2 Standards and Regulations

The OSHA regulation 29 CFR 1926.62 applies to situations involving lead paint disturbance in structures not used as a residence by children under six years of age. A synopsis of the significant components of this regulation follows:

Safety Procedures For Renovation, Demolition and/or Rehabilitation

On all work areas where demolition is performed in a manner that disturbs paint, plaster, putty or other materials containing measurable levels of lead, the employer shall comply with the following safe work practices:

1. Whenever there is an exposure to lead dust, a respirator and personal protective clothing such as those listed in 1926.62 shall be worn.
2. The employer shall not permit employees to eat, drink, smoke, chew (gum or tobacco), or apply cosmetics in the work area.
3. The employer shall provide medical surveillance and monitoring, and exposure monitoring to employees who are potentially exposed to measurable levels of lead.
4. When tools and/or equipment are removed from the work area, they shall be cleaned with a solution of tri-sodium phosphate or vacuumed with a HEPA vacuum. All work areas shall be cleaned at the end of the job with a HEPA vacuum.
7. Adequate precautions shall be implemented during demolition to insure that the outside environment is protected, according to applicable state and federal regulations and guidelines (e.g. EPA, National Ambient Air Quality Standards).
6. To prevent contamination of adjacent areas, the employer shall seal off the work areas.

The EPA under the Resource Conservation and Recovery Act (RCRA) has promulgated regulations for the disposal of construction debris contaminated with lead-based paint.

Construction waste containing lead-coated materials is considered hazardous waste under the EPA RCRA regulations if toxicity characteristic leaching procedure (TCLP) analytical results are greater than 5 milligrams per liter (mg/l). Representative samples of the waste stream that include materials coated with lead-based paint must be collected and analyzed to determine disposal requirements.

4.1.3 LBP Survey Results

ECMS inspected representative areas of all homogenous painted surfaces in the areas surveyed. *ECMS's* on-site evaluation revealed that lead exists on several surfaces throughout the building.

The survey was performed by utilizing X-ray fluorescence analysis. In general, measurable amounts of lead (0.1 mg/cm^2 or greater) were positively identified on surfaces located throughout the school.

The lead containing paint on these components throughout the building is generally in undamaged (<5% damage) condition.

Contractors should be made aware of the presence of lead-based paint so that they can properly protect their workers, address the testing and disposal of this material (as required), and properly comply with all applicable regulations. Specifically, Contractors are required to comply with all applicable OSHA regulations including 29 CFR 1926.62, "Lead Exposure in Construction: Interim Final Rule" and 29 CFR 1926.59, "Hazard Communication for the Construction Industry". Also, any applicable pre-disposal testing requirements of receiving or disposal facilities for the construction debris should be identified and complied with. The planned facility for the receipt of construction debris should also be identified. See Section 4.5 for specific recommendations.

4.2 LBP Survey Recommendations

Summary and Recommendations

The current OSHA standard (29 CFR 1926.62) for lead exposure in construction has a permissible exposure limit (PEL) of 50 micrograms per cubic meter of air ($50 \text{ } \mu\text{g/m}^3$), measured as an 8-hour time-weighted average (TWA). As with all OSHA health standards, when the PEL is exceeded, the hierarchy of controls requires employers to institute feasible engineering and work practice controls as the primary means to reduce and maintain employee exposures to levels at or below the PEL. When all feasible engineering and work practice controls have been implemented but have proven inadequate to meet the PEL, employers must nonetheless implement these controls and must supplement them with appropriate respiratory protection. The employer also must ensure that employees wear the respiratory protection provided when it is required.

The EPA under the Resource Conservation and Recovery Act (RCRA) has promulgated regulations for the disposal of construction debris contaminated with lead based paint. Construction waste containing lead-coated materials is considered hazardous waste under the EPA RCRA regulations if toxicity characteristic leaching procedure (TCLP) analytical results are greater than 5 milligrams per liter (mg/l). Representative samples of the waste stream that include materials coated with lead-based paint must be collected and analyzed to determine disposal requirements.

5.0 MISCELLANEOUS HAZARDOUS MATERIALS INSPECTION RESULTS

ECMS surveyed the **20 Pelham Road School** for hazardous materials that may require special handling or disposal. Empty containers (5-gallon buckets, jugs, pails, etc.) observed in the building were not included in the survey tally, and should be handled as general solid waste during demolition. Although ECMS inventoried existing chemicals (cleaners, oils, laboratory chemicals, etc), the hazardous materials inventory does not include costing to dispose of these items, as they are likely to be re-used instead of disposed of. Refrigerant inventory includes coolers and refrigerators that are likely to be re-used.

Elevators, Transformers, Emergency Generators

No elevators or transformers were observed inside the school during the survey. A non-functioning emergency generator was observed during the survey, all oils should be packaged and disposed or recycled in a proper manner.

Freon/Refrigerants

Freon containing building components (coolers, refrigerators and window air conditioners) was surveyed during the inspection. These materials should be packaged and disposed or recycled in a proper manner.

ECMS observed 5 wall mounted bubblers, 1 walk-in fridge/freezer, and 6 fridge/freezers throughout the school.

Mercury Containing Materials

Over 3,410 linear feet (LF) of fluorescent light tubes (4-foot bulbs), over 230 linear feet (LF) florescent tubes (2 foot bulbs) were identified. Mercury switches or thermostats were observed in mechanical spaces and the boiler room during the survey. Estimated removal costs are \$0.30/foot (**\$1,092.00**)

Fluorescent light tubes potentially contain mercury and lead, and must be disposed of in accordance with EPA's Universal Waste Rule, as well as local and State regulations.

Fluorescent Light Components

Approximately 460 light fixture ballasts were identified. No sampling of light ballast capacitors, transformers, or switchgear was performed as part of this investigation. Estimated removal costs are 460 light ballasts @ \$7.50/each (**\$3,450.00**)

ECMS did not examine ballasts during the survey; however, each ballast should be evaluated during renovations and appropriately handled as either a PCB or non-PCB containing.

Lead Acid Batteries

Lead acid batteries usually found in exit signs, battery back-up components for computers, and in emergency lighting. These materials should be packaged and disposed or recycled in a proper manner.

ECMS observed a total of 11 exit signs during the survey. Batteries were observed in the boiler room and one associated with the emergency generator. Estimated cost of removal 11 signs and 2 batteries is **\$250.00**.

APPENDIX A

ASBESTOS BULK SAMPLE RESULTS



Asbestos Identification Laboratory

165 New Boston St., Ste 271
Woburn, MA 01801
781-932-9600

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

Batch: 8259



September 02, 2015

Holly Drum
ECMS Inc.
369 Congress St.
Boston, MA 02210

Project Number: 1009.067

Project Name: 20 Pelham Road, Lexington

Date Sampled: 2015-09-02

Work Received: 2015-09-02

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

Dear Holly Drum,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project.

The 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. 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

Thank you Holly Drum for your business.

Michael Manning
Owner/Director

September 02, 2015

Holly Drum
 ECMS Inc.
 369 Congress St.
 Boston, MA 02210

Project Number: 1009.067

Project Name: 20 Pelham Road, Lexington

Date Sampled: 2015-09-02

Work Received: 2015-09-02

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

FieldID	Material	Location	Color	Non-Asbestos %	Asbestos %
LabID					
01A	Mastic Floor	Gym	black	Non-Fibrous 90	Detected Chrysotile 10
88555					
01B	Mastic Floor	Hallway Outside Sacristy	null		Not Analyzed
88556					
01C	Mastic Floor	Mathmatics	null		Not Analyzed
88557					
01D	Mastic Floor	Second Grade	null		Not Analyzed
88558					
01E	Mastic Floor	Kindergarten	null		Not Analyzed
88559					
02A	Fitting Insulation	Crawl Space	gray	Mineral Wool 40 Non-Fibrous 55	Detected Chrysotile 5
88560					
02B	Fitting Insulation	Boiler Room	null		Not Analyzed
88561					
02C	Fitting Insulation	Boiler Room	null		Not Analyzed
88562					
03A	Pipe Wrap + Black Mastic	Crawl Space	multi	Fiberglass 20 Cellulose 60 Non-Fibrous 20	None Detected
88563					
04A	Boiler #1 Insulation	Boiler Room	white	Non-Fibrous 60	Detected Chrysotile 5 Amosite 35
88564					
04B	Boiler #2 Insulation	Boiler Room	null		Not Analyzed
88565					
05A	Duct Wrap Insulation	Boiler Room	gray	Non-Fibrous 40	Detected Chrysotile 60
88566					
05B	Duct Wrap Insulation	Boiler Room	null		Not Analyzed
88567					

Wednesday 02
 Analyzed by:



End of Report
Batch: 8259

Page 1 of 1



Asbestos Identification Laboratory

165 New Boston St., Ste 271
Woburn, MA 01801
781-932-9600

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

Batch: 8323



September 08, 2015

Holly Drum
ECMS Inc.
369 Congress St.
Boston, MA 02210

Project Number: 1009.067

Project Name: 20 Pelham Rd, Lexington

Date Sampled: 2015-09-03

Work Received: 2015-09-04

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

Dear Holly Drum,

Asbestos Identification Laboratory has completed the analysis of the samples from your office for the above referenced project.

The 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. This report shall not be reproduced, except in full, without the written consent of Asbestos Identification Laboratory.

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- State of Rhode Island and Providence Plantations Department of Health Certification: AAL-121

Thank you Holly Drum for your business.

Michael Manning
Owner/Director

Holly Drum
 ECMS Inc.
 369 Congress St.
 Boston, MA 02210

Project Number: 1009.067
Project Name: 20 Pelham Rd, Lexington

Date Sampled: 2015-09-03
Work Received: 2015-09-04

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

FieldID	Material	Location	Color	Non-Asbestos %	Asbestos %
LabID					
01A	Sink Condensate Black	Nursery Rm	black	Non-Fibrous 90	Detected Chrysotile 10
89169					
01B	Sink Condensate Black	Nursery Rm	null		Not Analyzed
89170					
02A	Transite Panel	Kitchen	multi	Non-Fibrous 80	Detected Chrysotile 20
89171					
02B	Transite Panel	Kitchen	null		Not Analyzed
89172					
03A	2x2 CT Pin Dot + Fissure	Vestibule	multi	Mineral Wool 20 Cellulose 60 Non-Fibrous 20	None Detected
89173					
03B	2x2 CT Pin Dot + Fissure	Armenian	multi	Mineral Wool 20 Cellulose 60 Non-Fibrous 20	None Detected
89174					
04A	1x1 CT Dot Spline	Nursery Rm	multi	Mineral Wool 60 Cellulose 30 Non-Fibrous 10	None Detected
89175					
04B	1x1 CT Dot Spline	Nurse	multi	Mineral Wool 60 Cellulose 30 Non-Fibrous 10	None Detected
89176					
05A	Ceiling Plaster	Kitchen	multi	Non-Fibrous 100	None Detected
89177					
05B	Ceiling Plaster	Kitchen	multi	Non-Fibrous 100	None Detected
89178					
05C	Ceiling Plaster	Girl's Dressing	multi	Non-Fibrous 100	None Detected
89179					
06A	Wall Plaster	Principal	multi	Non-Fibrous 100	None Detected
89180					
06B	Wall Plaster	Secretary	multi	Non-Fibrous 100	None Detected
89181					
06C	Wall Plaster	Nurse	multi	Non-Fibrous 100	None Detected
89182					

FieldID	Material	Location	Color	Non-Asbestos %	Asbestos %
LabID					
07A	Skim Coat	Kitchen Storage	white	Non-Fibrous	100 None Detected
89183					
07B	Skim Coat	Kitchen Storage	white	Non-Fibrous	100 None Detected
89184					
07C	Skim Coat	Kitchen Storage	white	Non-Fibrous	100 None Detected
89185					
08A	Mastic Black	Gym Storage	black	Non-Fibrous	100 None Detected
89186					
08B	Cove Base Brown	Gym Storage	brown	Non-Fibrous	100 None Detected
89187					
09A	Mastic Black	Kitchen Storage	black	Non-Fibrous	100 None Detected
89188					
09B	Cove Base Green	Kitchen Storage	green	Non-Fibrous	100 None Detected
89189					
10A	Mastic Black	Gym Storage	black	Non-Fibrous	100 None Detected
89190					
10B	Mastic Tan	Gym Storage	tan	Non-Fibrous	100 None Detected
89191					
10C	Cove Base Black	Gym Storage	black	Non-Fibrous	100 None Detected
89192					
11A	Mastic Black Assoc. w/ CB Nursery Bedroom Gray		black	Non-Fibrous	100 None Detected
89193					
11B	Mastic Black Assoc. w/ CB Nursery Bedroom Gray		black	Non-Fibrous	100 None Detected
89194					
12A	Mastic Gray	Nursery Room	white	Non-Fibrous	100 None Detected
89195					
12B	Cove Base Blue	Nursery Room	white	Non-Fibrous	100 None Detected
89196					
13A	Floor Expansion Joint	Boiler Room	gray	Non-Fibrous	100 None Detected
89197					
13B	Floor Expansion Joint	Boiler Room	gray	Non-Fibrous	100 None Detected
89198					
14A	Pipe Wrap Over Fiberglass	Boiler Room	multi	Mineral Wool Cellulose Non-Fibrous	60 None 20 20 Detected
89199					
14B	Pipe Wrap Over Fiberglass	Boiler Room	multi	Mineral Wool Cellulose Non-Fibrous	60 None 20 20 Detected
89200					

FieldID	Material	Location	Color	Non-Asbestos %	Asbestos %
LabID					
15A	Boiler Exhaust Insulation	Boiler Room	white	Non-Fibrous	10 Detected Chrysotile 90
89201					
15B	Boiler Exhaust Insulation	Boiler Room	null		Not Analyzed
89202					
15C	Boiler Exhaust Insulation	Boiler Room	null		Not Analyzed
89203					
16A	Tank Insulation	Boiler Room	white	Non-Fibrous	50 Detected Chrysotile 25 Amosite 25
89204					
16B	Tank Insulation	Boiler Room	null		Not Analyzed
89205					
16C	Tank Insulation	Boiler Room	null		Not Analyzed
89206					
17A	Pipe Insulation	Generator	white	Cellulose Non-Fibrous	35 Detected 25 Chrysotile 35 Amosite 5
89207					
17B	Pipe Insulation	Generator	null		Not Analyzed
89208					
17C	Pipe Insulation	Generator	null		Not Analyzed
89209					
18A	Exhaust Insulation	Generator	white	Cellulose Non-Fibrous	35 Detected 20 Chrysotile 35 Amosite 10
89210					
18B	Exhaust Insulation	Generator	null		Not Analyzed
89211					
18C	Exhaust Insulation	Generator	null		Not Analyzed
89212					
19A	Window Caulk Type II	Window	gray	Non-Fibrous	90 Detected Chrysotile 10
89213					
19B	Window Caulk Type II	Window	null		Not Analyzed
89214					
20A	Caulk Type I	Window	gray	Non-Fibrous	95 Detected Chrysotile 5
89215					
20B	Caulk Type I	Window	null		Not Analyzed
89216					
21A	Glazing	Window	white	Non-Fibrous	98 Detected Chrysotile 2
89217					
21B	Glazing	Window	null		Not Analyzed
89218					

Tuesday 08
Analyzed by:

Michael Thumming

End of Report
Batch: 8323

Page 3 of 3

Lab ID# (Lab Use Only)	Field ID/Sample Date (Client Reference)	Temp in Celsius =	Stereo Scope					Optical Properties							Non-Asbestos Percentage (%)									
			Material / Location	% of Asbestos	Color	Homogeneity	Texture	Friable	Asbestos Minerals	Asbestos %	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI	Fiberglass	Mineral Wood	Cellulose	Hair	Synthetic	Other	Non-Fibrous	
20	15B 15A HD		Material BOILER EXHAUST INSULATION Location BOILER ROOM																					
3	15C		Material Location																					
5	16A		Material TANK INSULATION Location BOILER ROOM	35	WH	Y	EP	Y																50
8	16B		Material Location																					
8	16C		Material Location																					

DVA

DVA

DVA

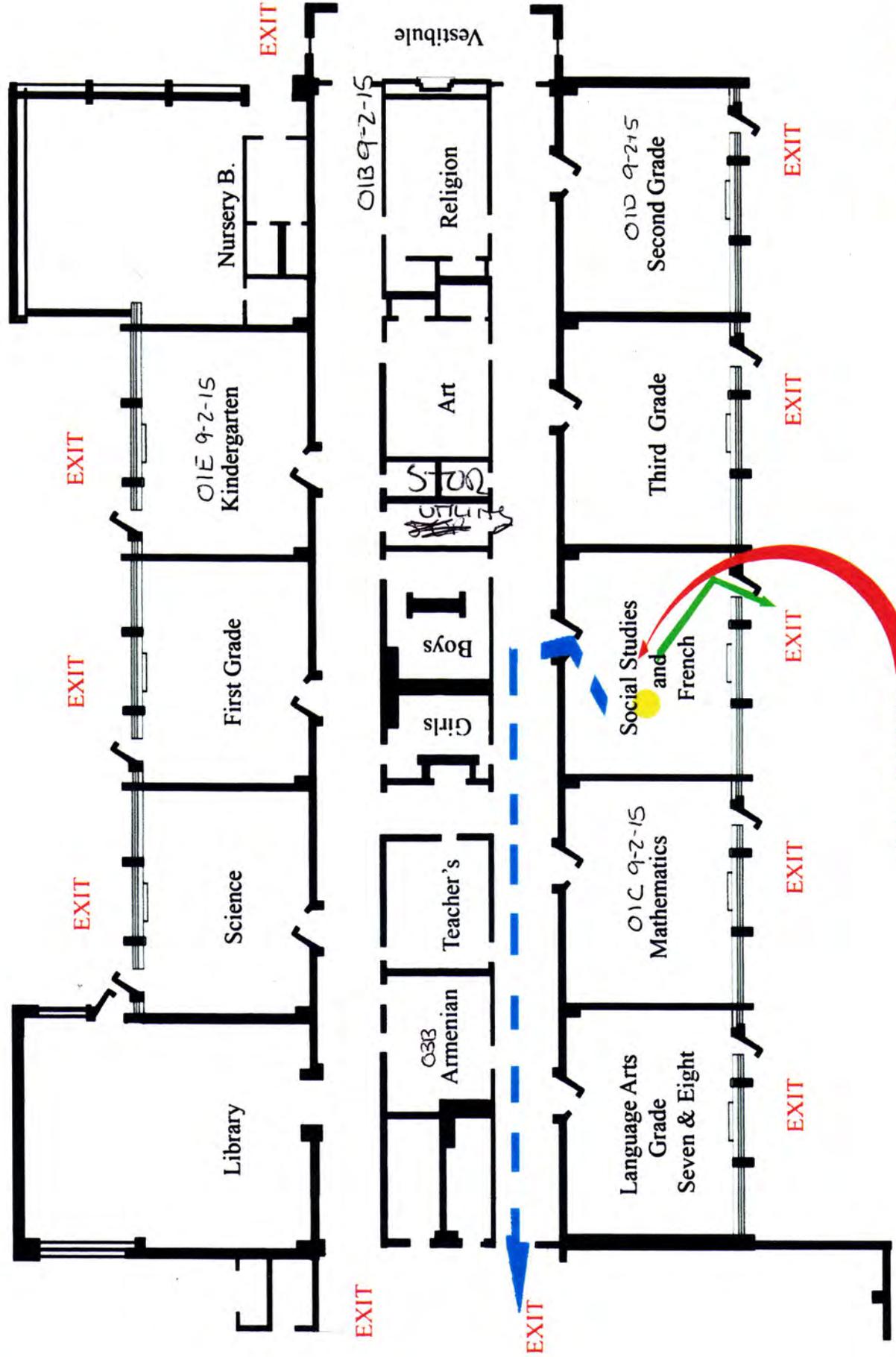
DVA

**APPENDIX B
ASBESTOS ABATEMENT
COST ESTIMATE**

**APPENDIX B
REMEDIATION COST ESTIMATE
CONFIRMED ASBESTOS CONTAMINATED MATERIALS**

Material Description	Location	Quantity	Unit Cost	Total Cost
9"x9"/12"x12" Floor Tiles* & Mastic	Nursery Room, Nursery Bedroom, Cafeteria, Gym Storage, Girl's Dress, Boy's Dress, Stage Storage, Café Storage, Faculty Room, Secretary, Hallways, Principal, Nurse, Library, Science, First Grade, Kindergarten, Nursery B, Second Grade, Religion, Art, Third Grade, Storage, Utility, SS/French, Teacher's, Math, Armenian, Language, Kitchen Storages, Gymnasium, Gym/Stage, Gym Storage	40,000 SF	\$ 3.75/sf	\$ 150,000.00
Boiler Packing Insulation	Boiler Room	16 CY @2EA	\$ 900/CY	\$ 28,800.00
Boiler Exhaust Insulation	Boiler Room	800 SF	\$ 8.00/SF	\$ 6,400.00
Tank Insulation	Boiler Room	100 SF @3EA	\$ 8.00/SF	\$ 2,400.00
Pipe Insulation	Emergency Generator	50 LF	\$ 25.00/LF	\$ 1,250.00
Exhaust Insulation	Emergency Generator	60 SF	\$ 25.00/SF	\$ 1,500.00
"Mudded" Pipe Fitting Insulation	Throughout Including Crawlspace & Trenches	800 EA	\$ 50.00/EA	\$ 40,000.00
Duct Wrap Insulation	Boiler Room & Mechanical Space	575 SF	\$ 8.00/SF	\$ 4,600.00
Sink Condensate	Nursery Room, Library, Science, First Grade, Kindergarten, Nursery B, Second Grade, Third Grade, SS/French, Teacher's, Math, Armenian, Language	12 EA	\$ 75.00/EA	\$ 900.00
Cleaning & Labeling Boiler Room	Boiler Room	1	N/A	\$ 10,000.00
			Total	\$ 245,850.00

APPENDIX C
LOCATION DRAWINGS



You are here



Primary Exit



Secondary Exit

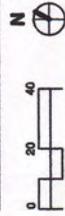
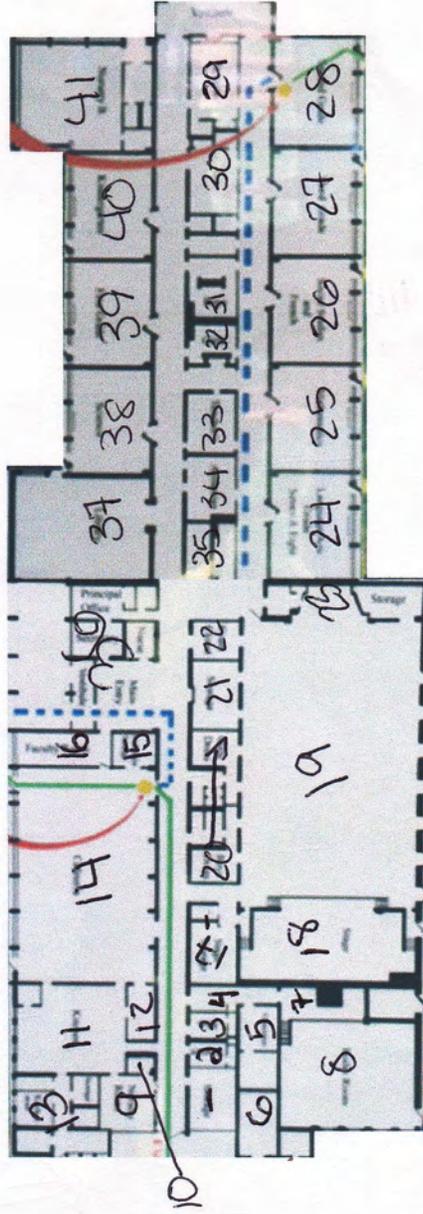
Pelham Road Site

Lexington, MA

Multiple School
Construction Project:
Feasibility Study

**Existing
First Floor Plan**

Gross SF
46,800 GSF



12 AUGUST 2015

DiNisco Design Partnership
architects and planners

APPENDIX D

LEAD BASED PAINT
XRF RESULTS & LOCATION DRAWING

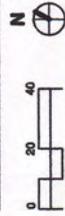
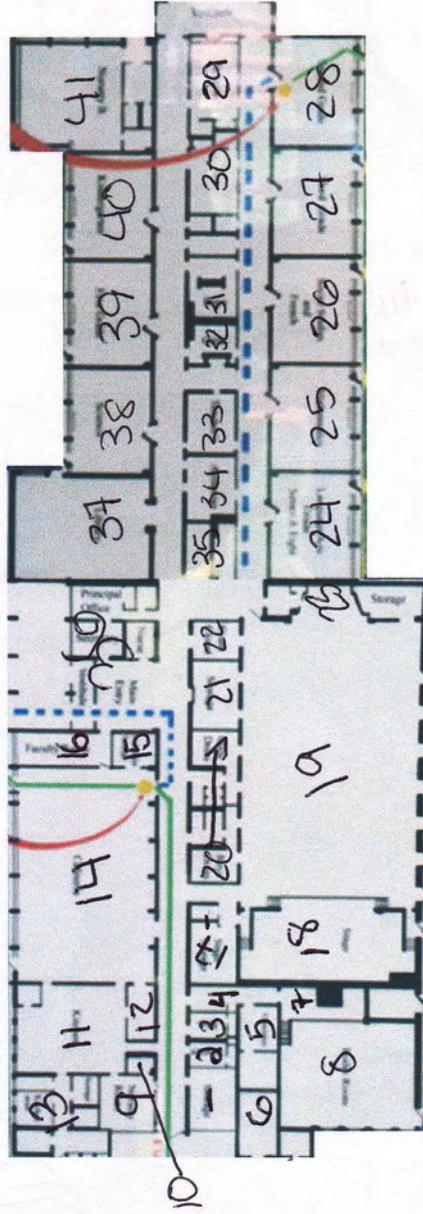
Pelham Road Site

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**Existing
First Floor Plan**

Gross SF
46,800 GSF



12 AUGUST 2015

DiNisco Design Partnership
architects and planners

**XRF Results
20 Pelham Road
Lexington, MA**

Sample Location #	Substrate	Component	Color	Location/Description	XRF Reading (mg/cm²)
1	CMU	Wall	White	See Drawing	0.00
1	Metal	Door Casing	Tan	See Drawing	0.01
1	Wood	Wall	Green	See Drawing	0.00
1	Metal	Radiator	White	See Drawing	0.11
2	Metal	Door Casing	Tan	See Drawing	0.01
2	CMU	Upper Wall	Terracotta	See Drawing	0.00
2	Metal	Stall	Yellow	See Drawing	0.21
2	Metal	Radiator	Cream	See Drawing	0.00
3	CMU	Upper Wall	Terracotta	See Drawing	0.00
3	Metal	Door Casing	Tan	See Drawing	0.14
3	Metal	Radiator	Tan	See Drawing	0.04
4	CMU	Wall	White	See Drawing	0.00
4	Concrete	Floor	Gray	See Drawing	0.03
4	Metal	Door Casing	Tan	See Drawing	0.01
5	Metal	Door Casing	Tan	See Drawing	0.03
5	Metal	Door	Tan	See Drawing	>0.40
5	CMU	Wall	White	See Drawing	0.00

**XRF Results
20 Pelham Road
Lexington, MA**

Sample Location #	Substrate	Component	Color	Location/Description	XRF Reading (mg/cm²)
5	Metal	Generator	Gray	See Drawing	0.07
5	Metal	Cabinet	Black	See Drawing	0.08
6	Metal	Door Casing	Tan	See Drawing	0.01
6	Metal	Door	Tan	See Drawing	0.15
6	CMU	Wall	White	See Drawing	0.00
6	Metal	Electrical Panel	Gray	See Drawing	0.02
7	CMU	Lower Wall	Gray	See Drawing	>0.40
7	CMU	Upper Wall	White	See Drawing	0.00
7	Concrete	Floor	Gray	See Drawing	0.02
7	Brick	Column	Gray	See Drawing	0.00
7	Brick	Exhaust	Gray	See Drawing	0.00
8	CMU	Upper Wall	White	See Drawing	0.00
8	Concrete	Lower Wall	Gray	See Drawing	0.00
8	Concrete	Floor	Gray	See Drawing	0.00
8	Metal	Boiler	Black	See Drawing	0.07
8	Metal	Pipe	Yellow	See Drawing	0.01
8	Fiberglass	Pipe	Gray	See Drawing	0.00

XRF Results
20 Pelham Road
Lexington, MA

Sample Location #	Substrate	Component	Color	Location/Description	XRF Reading (mg/cm²)
8	Metal	Door Casing	Tan	See Drawing	0.07
8	Metal	Door	Tan	See Drawing	0.30
9	Metal	Door Casing	Tan	See Drawing	0.03
9	Plaster	Wall	Green	See Drawing	0.01
9	Transite	Window Unit	Green	See Drawing	0.04
9	Unknown	Chase	Yellow	See Drawing	>0.40
10	Metal	Door Casing	Yellow	See Drawing	0.00
10	Plaster	Upper Wall	Yellow	See Drawing	0.00
10	Metal	Stall	Beige	See Drawing	0.21
11	Metal	Window Unit	Brown	See Drawing	0.07
11	Plaster	Ceiling	Tan	See Drawing	0.00
12	Plaster	Ceiling	Tan	See Drawing	0.00
13	Metal	Door Casing	Tan	See Drawing	0.05
13	CMU	Wall	Tan	See Drawing	0.00
13	CMU	Wall	White	See Drawing	0.00
13	Metal	Radiator	White	See Drawing	0.04
13	Metal	Door	Tan	See Drawing	0.24

**XRF Results
20 Pelham Road
Lexington, MA**

Sample Location #	Substrate	Component	Color	Location/Description	XRF Reading (mg/cm²)
14	CMU	Wall	White	See Drawing	0.36
14	Transite	Window Unit	White	See Drawing	>0.40
14	Metal	Radiator	Green	See Drawing	0.14
15	CMU	Wall	Tan	See Drawing	0.00
15	Metal	Door Casing	Tan	See Drawing	0.02
16	CMU	Wall	Tan	See Drawing	0.01
16	Metal	Door Casing	Off White	See Drawing	0.06
16	Metal	Radiator	Light Green	See Drawing	0.05
17	Metal	Door Casing	Yellow	See Drawing	0.07
17	CMU	Wall	Yellow	See Drawing	0.00
17	Metal	Radiator	Yellow	See Drawing	0.00
18	CMU	Wall	White	See Drawing	>0.40
19	CMU	Upper Wall	White	See Drawing	0.03
19	CMU	Lower Wall	Green	See Drawing	0.02
19	Metal	Door Casing	Tan	See Drawing	0.02
20	CMU	Upper Wall	White	See Drawing	0.04
20	Metal	Door Casing	Tan	See Drawing	0.01

**XRF Results
20 Pelham Road
Lexington, MA**

Sample Location #	Substrate	Component	Color	Location/Description	XRF Reading (mg/cm²)
21	CMU	Wall	White	See Drawing	0.04
21	Metal	Door Casing	Tan	See Drawing	0.01
22		No Access		See Drawing	
23	CMU	Wall	Cream	See Drawing	0.05
23	Metal	Door Casing	Tan	See Drawing	0.01
23	Metal	Duct	Cream	See Drawing	0.07
24	Metal	Door Casing	Tan	See Drawing	0.01
24	Plaster	Wall	White	See Drawing	0.00
25	Metal	Door Casing	Green	See Drawing	0.03
25	CMU	Wall	Cream	See Drawing	0.06
26	Metal	Door Casing	Light Blue	See Drawing	0.02
26	CMU	Wall	Light Blue	See Drawing	0.00
26	Pegboard	Wall	White	See Drawing	0.00
27	Metal	Door Casing	Green	See Drawing	0.03
27	CMU	Wall	Light Green	See Drawing	0.06
27	Metal	Radiator	Green	See Drawing	0.14
28	Metal	Door Casing	Green	See Drawing	0.03

**XRF Results
20 Pelham Road
Lexington, MA**

Sample Location #	Substrate	Component	Color	Location/Description	XRF Reading (mg/cm²)
28	CMU	Wall	Green	See Drawing	0.00
28	Metal	Radiator	Green	See Drawing	0.09
29	Metal	Door Casing	Green	See Drawing	0.03
29	CMU	Upper Wall	White	See Drawing	0.04
30	Metal	Door Casing	Green	See Drawing	0.03
30	CMU	Wall	White	See Drawing	0.04
31	Metal	Door Casing	Green	See Drawing	0.03
32	Metal	Stall	Brown	See Drawing	0.02
33	Metal	Door Casing	Green	See Drawing	0.03
33	CMU	Wall	White	See Drawing	0.00
34	CMU	Lower Wall	Tan	See Drawing	>0.40
34	CMU	Upper Wall	White	See Drawing	0.00
35	Metal	Door Casing	Brown	See Drawing	0.04
36	Metal	Door Casing	Cream	See Drawing	0.03
36	Plaster	Wall	Cream	See Drawing	>0.40
36	Metal	Radiator	Tan	See Drawing	0.09
37	Metal	Door Casing	Green	See Drawing	0.02

**XRF Results
20 Pelham Road
Lexington, MA**

Sample Location #	Substrate	Component	Color	Location/Description	XRF Reading (mg/cm²)
37	CMU	Wall	Yellow	See Drawing	0.02
37	Metal	Radiator	Green	See Drawing	0.13
38	Metal	Door Casing	Green	See Drawing	0.02
38	CMU	Wall	Green	See Drawing	0.02
38	Metal	Radiator	Green	See Drawing	0.11
39	Metal	Door Casing	Green	See Drawing	0.02
39	CMU	Lower Wall	Green	See Drawing	0.03
39	Metal	Radiator	Green	See Drawing	0.13
40	Metal	Door Casing	Green	See Drawing	0.01
40	CMU	Lower Wall	Green	See Drawing	0.02
40	Metal	Radiator	Green	See Drawing	0.11
41	Metal	Door Casing	Green	See Drawing	0.02
41	CMU	Lower Wall	Light Blue	See Drawing	0.00
41	Metal	Radiator	Green	See Drawing	0.05