

CONTAMINATED WATER PIPING REPLACEMENT

**HEBRON ELEMENTARY SCHOOL
92 CHURCH STREET
HEBRON, CT 06248
STATE PROJECT NO. 067-0042 CV
BID #2020-03**

S/P+A PROJECT NO. 19.003

DATE: November 4, 2019

The following changes to the Drawings and Project Specifications shall become a part of the Drawings and Project Specifications; superseding previously issued Drawings and Project Specifications to the extent modified by Addendum No. 4.

General Information:

- The bid date remains Wednesday, November 20, 2019 at 10:00 a.m.
- The extended deadline for RFI's remains Wednesday, November 13, 2019.
- A second, non-mandatory pre-bid site meeting will be held on Thursday, November 7, 2019 at 4:00pm for bidders to walk through the school with school staff. All questions must be submitted in writing.

Changes to the Specifications:

- Delete "Bid Form" in its entirety.
- Add: Revised "Bid Form", attached as part of this Addendum. (3 pages)
- Table of Contents: Add the following:
 - Section 028200 Asbestos Abatement -19 pages
 - Section 028319 Lead Awareness -10 pages

New Specifications:

- Section 028200 "Asbestos Abatement", attached as part of this Addendum. (19 pages)
- Section 028319 "Lead Awareness", attached as part of this Addendum. (10 pages)
- Fuss and O'Neill: "Limited Hazardous Building Materials Inspections Report". (70 pages)

New Drawings:

- Drawing HM-01 "Hazardous Materials Abatement Plan", dated November 4, 2019 attached as part of this Addendum.

The bid date remains Wednesday, November 20, 2019 at 10:00 a.m. by this addendum.

The addendum consists of one hundred-three (103) pages of 8½" x 11" text, and one (1) page of 30" x 42" drawings.

End of Addendum No. 4

BIDDER: _____
Name

Address

To: **Andrew Tierney**
Town Manager Office
Town Office Building
15 Gilead Street
Hebron, CT 06248

Project: **Hebron Elementary School**
Contaminated Water Piping Replacement
92 Church Street
Hebron, CT 06248
State Project No. 067-0042 CV
Bid No. 2020-03

We hereby submit our bid on the above referenced project. We are enclosing our bid surety in the amount of 10% of our base bid which will be returned to us after the award is made. Following award, we will be able to provide the required 100% Performance Bond and 100% Labor and Materials Bond from the following insurance company: _____.

We will provide the requested Certificate of Insurance from the following insurance Company:
_____.

We have read the General Information and Conditions to bidders and are submitting our bid in full compliance with all your General Terms and Conditions except as noted below under exceptions.

We propose to provide all materials, labor, equipment and services necessary to properly and fully complete the specified contaminated water piping replacement project to the satisfaction of the Owner and Architect pursuant to the terms of the Contract Documents for the costs as detailed below:

Base Bid:

Hebron Elementary School Contaminated Water Piping Replacement, the entire project for a Total Cost of

\$ _____ Dollars (\$) .00).
written figure

We will commence work _____ calendar days after receipt of "Notice to Proceed" or signing of Contract. We will be able to substantially complete the project within _____ calendar days thereafter (see SIB-1, 1.1.B), **but no later than August 15, 2020.**

Alternates

ADD ALTERNATE NO. 1: Fully Copper Water Distribution System: For the work, methods, procedures and materials (See Section 012300 and the Construction Documents), we propose to Add to the Base Bid a total of

_____ Dollars (\$) .00)
written figure

The project schedule will be increased by _____ calendar days to substantially complete the work indicated under Alternate 1, but no later than **August 15, 2020**.

Unit Prices:

As required by the Base Bid, should deteriorated or damaged materials be required to be removed as determined by the Architect or Owner, the cost to remove and replace the referenced material, (or credit for specified material not provided or installed) including all labor, material, equipment and related furnishings is as follows:

1. Add: Acoustical panel ceiling assembly \$_____/SF
2. Deduct: Acoustical panel ceiling assembly \$_____/SF
3. Add: Mini Containment preparation to enclose asbestos abatement (up to 100 SF of material removal) \$_____/containment
4. Add: Small Containment preparation to enclose asbestos abatement (>100-250 SF of material removal) \$_____/containment
5. Add: Medium Containment preparation to enclose asbestos abatement (>250-750 SF of material removal) \$_____/containment
6. Add: Large Containment preparation to enclose asbestos abatement (>750-2,500 SF of material removal) \$_____/containment
7. Add: Asbestos mudded pipe fitting insulation removal and disposal as ACM \$_____/fitting
8. Add: Asbestos mudded pipe fitting insulation removal and disposal as ACM via glove bag \$_____/glove bag
9. Add: Asbestos pipe insulation removal and disposal as ACM \$_____/LF
10. Add: Asbestos floor tile and mastic and associated adhesive/leveling agent removal and disposal as ACM \$_____/SF
11. Add: Asbestos caulking compound associated with sink countertop units removal and disposal as ACM \$_____/LF
12. Add: Lead containing ceramic tile removal and disposal as lead waste \$_____/SF
13. Add: Lead containing ceramic tile removal and disposal as lead containing waste \$_____/SF
14. Add: Lead containing solder on metal, removal and disposal as RCRA lead waste \$_____/LF
15. Add: Lead containing solder on metal, removal and recycling as scrap metal \$_____/LF

Bidders are required to hold their Bid Price for a period of sixty (60) days after submission of Bids to the Town of Hebron Manager's Office.

If written notice of the acceptance of this Bid is mailed, transmitted by facsimile, or delivered to the undersigned at the Address designated above, within ninety (90) days after the date of Bid Opening, or any time thereafter before this Bid is withdrawn, the undersigned will, within ten (10) days after the date of mailing, faxing or delivering of the notice, execute and deliver a contract in the Standard Form of Agreement Between the Owner and Contractor, AIA Document A101, or similar contract modified as may be mutually agreed upon.

The undersigned acknowledges that he has examined the documents, visited and examined the site as required under "Instructions to Bidders", examined the availability of labor and materials and further agrees to comply with all the requirements as to the conditions of employment and wage rates set forth in the Contract Documents.

Addenda:

The Undersigned acknowledges receipt of the following addenda to the Contract Documents, listed by number and date:

Number _____ Dated: _____

Number _____ Dated: _____

Number _____ Dated: _____

Number _____ Dated: _____

Number _____ Dated: _____

Number _____ Dated: _____

NON-COLLUSIVE BID STATEMENT

The undersigned bidder certifies that this bid is made independently and without collusion, agreement, understanding or planned course of action with any other bidder and that the contents of the bid shall not be disclosed to anyone other than employees, agents or sureties prior to the official bid opening.

Date: _____

Name of Firm: _____

Address: _____

Signature: _____

Printed Name and
Title of Agent submitting bid: _____

Telephone Number: _____

Fax Number: _____

Email Address: _____

SECTION 028200 – ASBESTOS ABATEMENT

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. General Provisions of Contract, including General Supplementary Conditions and Division 01 Specifications Sections, apply to this Section.
- B. Refer to the attached *Hazardous Building Materials Inspection Report* for the Site. Refer to the Hazardous Material Abatement Plan HM-01.
- C. Abatement areas represented on the Plans are to better aid in identification of areas requiring abatement. The Contractor shall refer to the architectural drawings for renovation and Site work information.
- D. Shading, hatching, and/or numbering represented on the Plans are to better aid in the identification of areas requiring abatement. The Contractor shall verify all existing conditions locations and/or quantities prior to finalizing the bid. Both these specifications and Plans are to be used to help identify material and may not both address all items, but are to both be considered.

1.2 RELATED SECTIONS

- A. Section 028319 – Lead Awareness
- B. Hazardous Materials Abatement Plan HM-01

1.3 CONSULTANT

- A. The Owner has retained Fuss & O’Neill, Inc. (the “Consultant”) for the purposes of project management and monitoring during Asbestos Abatement and lead removal. The Consultant will represent the Owner in all phases of the abatement project at the discretion of the Owner. The Contractor will regard the Consultant’s direction as authoritative and binding as provided herein, in matters particularly but not limited to approval of work areas, review of monitoring results, completion of the various segments of work, final completion of the abatement, submission of data, and daily field punch list items. The Licensed Asbestos Project Designer for this project is Kathleen C. Pane (CTDPH License #000191).

1.4 USE OF THE CONTRACT DOCUMENTS

- A. It shall be incumbent upon the Contractor to visit the Hebron Elementary School located at 92 Church Street, Hebron, Connecticut (the “Site”) and determine what exists, its condition, and what will be required to accomplish the Work intended by the Contract Documents. No increase in the Contract Sum will be permitted as a result of the Contractor’s failure to visit the Site and understand the existing conditions.
- B. All work shall comply with the Contract Documents and with applicable Codes, laws, regulations, and ordinances wherever applicable. The most stringent of all the foregoing shall govern.

- C. It is not intended that the Specifications show every detail of the Work, but the Contractor shall be required to furnish within the Contract Sum all material and labor necessary for the completion of the Work in accordance with the intent of the Specifications. In case of ambiguity among the Contract documents, the more stringent requirement as determined by the Consultant shall prevail.
- D. The Work of this Contract includes making modifications as necessary, subject to approval by the Owner in consultation with the Consultant, to correct any conflicts.
- E. All items, not specifically mentioned in the Specifications but implied by trade practices to complete the work, shall be included.

1.5 EXAMINATION OF THE SITE

- A. It is understood that the Contractor has examined the Site and made his/her own estimates of the facility, conditions, locations and quantities of all building materials and difficulties attending the execution of the Work, and has based his/her price thereon.
- B. Except for unforeseeable concealed conditions as determined by the Consultant, the Contractor shall make no claim for additional cost due to the existing conditions at the Site.

1.6 CONTRACTOR QUALIFICATIONS

- A. All bidders shall submit a record of prior experience in asbestos abatement projects, listing no less than three (3) completed jobs in the past year, with all projects of similar size and scope. The Contractor shall list the experience and training of the project foremen and all on-site personnel. The information that should be included is as follows:
 - 1. Project Name and Address
 - 2. Owner's Name, Address, Contact Information
 - 3. Architect/Consultant
 - 4. Contract Amount
 - 5. Date of Completion
 - 6. Extras and Changes
- B. The Contractor selected must appear on the approved list of Asbestos Contractors on file at the State of Connecticut Department of Public Health (CTDPH) and hold a valid license for asbestos abatement within the State of Connecticut. The Owner reserves the right to disqualify a Contractor that has been cited for CTDPH violations based on their own independent review.
- C. Submit a written statement regarding whether the Contractor has ever been found out-of-compliance with federal or state asbestos and lead regulations pertaining to worker protection, removal, transport, or disposal. The Owner reserves the right to disqualify a Contractor that fails to disclose such information and/or based on an independent review of violation details.

1.7 TESTING LABORATORY SERVICES

- A. The Contractor shall submit to the Consultant the name; address and qualifications of proposed laboratories intended to be utilized for sample analysis as required by this section.

1.8 ADDITIONAL GENERAL REQUIREMENTS

- A. The Contractor shall employ a competent Asbestos Abatement Supervisor with at least three (3) years of experience on projects of similar scope and magnitude who shall be responsible for all work involving asbestos abatement as described in the Specifications and defined in applicable regulations, and have full time daily supervision of the same. The Supervisor shall be the competent person as defined by Occupational Safety and Health Administration (OSHA) regulations.
- B. The Contractor shall allow the work of this contract to be inspected if required by local, state, federal, and any other authorities having jurisdiction over such work. The Contractor shall immediately notify the Owner and Consultant and shall maintain written evidence of such inspection for review by the Owner and Consultant.
- C. The Contractor shall incur the cost of all fines resulting from regulatory non-compliance as issued by federal, state, and local agencies. The Contractor shall incur the cost of all work requirements mandated by federal, state, and local agencies as a result of regulatory non-compliance or negligence. The Contractor shall incur the cost of all work required to accommodate all inspections.
- D. The Contractor shall immediately notify the Owner and Consultant of the delivery of all permits, licenses, certificates of inspection, certificates of approval, or certificates of occupancy, etc., and any other such instruments required under codes by authorities having jurisdiction, regardless of who issued, and shall cause them to be displayed to the Owner and Consultant for verification and recording.

1.9 SCOPE OF WORK

- A. Work outlined in this Section includes all work necessary for the removal and disposal of asbestos-containing materials (ACM) that will be impacted during renovation activities associated with the Site.

1.10 PROJECT DESCRIPTION

- A. The base bid includes the removal and disposal of all ACM identified in the scope of work for the Site as identified herein by workers meeting requirements of OSHA 1926.1101 for Class 1 and Class 2 work. Additional materials as discovered outside of the quantities listed will be covered by unit prices. In addition, materials that are below the quantities listed will be covered by unit prices for credit to the Owner. The quantities are estimates only and should be verified by the Contractor. This bid includes the following ACM to be removed

BASE BID - ACM

LOCATION	MATERIAL TYPE	ESTIMATED QUANTITY	NOTES
Girls' and Boys' Lavatory – 1963 Wing	White Caulk at Counter/Ceramic Wall Tile Junction	40 LF	1, 2
Classrooms 5, 6, 7, and 8 – 1957 Wing	Air Cell Pipe Insulation and Fittings	8 LF	1, 3, 4
Girls' and Boys' Lavatories – 1947 and 1963 Wing	Pipe insulation in Wet Walls	125 LF	1, 2

LF = Linear Feet

General Notes:

1. Quantities shall be verified by Contractor during the time of the walk through. Discrepancies of amounts and/or locations of ACM shall be addressed to the Owner and Consultant.
2. The white caulking compound is associated with the sink counter top and is on ceramic wall tile that contains lead. The caulking shall be completely removed from the counter unit and ceramic wall tile and disposed of as ACM.
3. Asbestos pipe fitting insulations exist in concealed areas, such as pipe chases and behind/above walls and ceilings. The Contractor is responsible for removing pipe necessary to accommodate the renovations to assure the piping has been included for removal within the appropriate work areas. The pipe locations shall be reviewed with the Consultant and Construction Manager to verify necessary removal locations. Piping was observed in several areas within brick and concrete block systems. All materials shall be removed and disposed of as ACM. Fiberglass insulation and other materials associated with the piping system shall be removed and disposed of as ACM. There are locations that consist of lead-containing ceramic wall tile. Refer to Section 028319 – Lead Awareness.
4. The air cell pipe insulation is located in penetrations within the slab, between the classroom floors and pipe tunnel ceiling.

1.10 DEFINITIONS

A. The following definitions relative to asbestos abatement apply:

1. ABATEMENT – Procedures to control fiber release from asbestos-containing materials; includes removal, encapsulation, and enclosure.
2. AIR MONITORING – The process of measuring the fiber concentration of an area or of a person.
3. AMENDED WATER – Water to which a surfactant has been added.
4. ASBESTOS – The name given to a number of naturally occurring fibrous silicates. This includes the serpentine forms and the amphiboles and includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite, or any of these forms, which have been chemically altered.
5. ASBESTOS FIBERS – Those particles with a length greater than five (5) microns and a length to diameter ratio of 3:1 or greater.
6. ASBESTOS WORK AREA – A regulated area as defined by Occupational Safety and Health Administration (OSHA) 29 CFR 1926.1101 where asbestos abatement operations are performed which is isolated by physical barriers to prevent the spread of asbestos dust, fibers, or debris. The regulated area shall comply with requirements of regulated area for demarcation, access, respirators, prohibited activities, competent persons and exposure assessments and monitoring.
7. CAULKING – Resilient mastic compound often having a silicone bituminous or rubber base; used to seal cracks, fill joints, and prevent leakage. Typical applications: around windows, and doors. Caulking is at joints between two dissimilar materials (i.e. masonry to wood, masonry to steel).
8. CLEAN ROOM – An uncontaminated area or room, which is a part of the worker decontamination enclosure with provisions for storage of workers' street clothes and protective equipment.
9. CLEARANCE SAMPLING – Final air sampling performed aggressively after the completion of the abatement project in a regulated area.
 - a. Air samples collected by the air sampling professional having a fiber concentration of less than 0.010 fibers/cc of air in each of five (5) samples collected inside the

containment will denote acceptable clearance sampling by Phase Contrast Microscopy (PCM).

Or

- b. Five air samples collected inside the containment by the air sampling professional having an average asbestos concentration of less than 70 structures per square millimeter of air will denote acceptable clearance sampling for Transmission Electron Microscopy (TEM).
10. COMPETENT PERSON – As defined by 29 CFR 1926.1101, a representative of the Contractor who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure; who has authority to take prompt corrective measures to eliminate such hazards during asbestos removal. Competent person shall be properly trained in accordance with EPA's Model Accreditation Plan.
11. CURTAINED DOORWAY – A device to allow ingress and egress from one area to another while permitting minimal air movement between the areas. Two curtained doorways spaced a minimum of six feet apart can form an airlock.
12. DECONTAMINATION ENCLOSURE SYSTEM – A series of connected areas, with curtained doorways between any two adjacent areas, for the decontamination of workers and equipment. A decontamination enclosure system always contains at least one airlock and is adjacent and connected to the regulated area, where possible.
13. ENCAPSULANT – A liquid material which can be applied to asbestos-containing materials which controls the possible release of asbestos fibers from the materials either by creating a membrane over the surface (bridging encapsulant) or penetrating the material and binding its components together (penetrating encapsulant).
14. EQUIPMENT ROOM – Any contaminated area or a room that is part of the worker decontamination enclosure with provisions for storage of contaminated clothing and equipment.
15. FIXED OBJECT – Unit of equipment or furniture in the work areas that cannot be removed from the work area.
16. FRIABLE ASBESTOS MATERIALS – Any material that contains more than 1% asbestos by weight, that can be crumbled, pulverized or reduced to powder by hand pressure.
17. GLAZING COMPOUND – Any compound used to hold window glass in place, also referred to as putty, or glazier's putty; it is not field applied, usually installed during manufacture of windows.
18. HEPA FILTER – High Efficiency Particulate Air (HEPA) filter in compliance with American National Standards Institute (ANSI) Z9.2-1979.
19. HEPA VACUUM EQUIPMENT – Vacuum equipment equipped with a HEPA filter system for filtering the effluent air from the unit.
20. MOVABLE OBJECT – Unit of equipment or furniture in the work area that can be removed from the work area.
21. NEGATIVE AIR PRESSURE EQUIPMENT – A portable local exhaust system equipped with HEPA filtration used to create negative pressure in a regulated area (negative with respect to adjacent unregulated areas) and capable of maintaining a constant, low velocity air flow into regulated areas from adjacent unregulated areas.
22. NESHAP – National Emission Standards for Hazardous Air Pollutants regulations enforced by the EPA.
23. PERMISSIBLE EXPOSURE LEVEL (PEL) – The maximum airborne concentration of asbestos fibers to which an employee is allowed to be exposed. The new level established by OSHA 29 CFR 1926.1101 is 0.1 fibers per cubic centimeter of air as an eight (8) hour time weighted average and 1.0 fibers /cc averaged over a sampling period of 30 minutes as an Excursion Limit. The Contractor is responsible for maintaining work areas in a manner that this standard is not exceeded.

24. PROJECT MONITOR – A professional capable of conducting air monitoring and analysis. This individual should be an industrial hygienist, an environmental scientist, or an engineer with experience in asbestos air monitoring and worker protection equipment and procedures. This individual should have demonstrated proficiency in conducting air sample collection in accordance with 29 CFR 1910.1001 and 29 CFR 1926.1101. This individual must have required training and be licensed by the State of Connecticut Department of Public Health.
25. REGULATED AREA – An area established by the employer to demarcate where Class I, II, and III asbestos work is conducted and any adjoining area where debris and waste from such asbestos work accumulate, and a work area within which airborne concentrations of asbestos exceed or there is a reasonable possibility that they may exceed the PEL.
26. SHOWER ROOM – A room between the clean room and the equipment room in the work decontamination enclosure with hot and cold running water and suitably arranged for employee showering during decontamination. The shower room is located in an airlock between the contaminated area and the clean area.
27. WATERPROOFING – Material, usually a membrane or applied compound (tar/mastic), used to make a surface impervious to water, includes concealed conditions (applications around doors, windows, and in wall cavities); sometimes combined with felts.

1.11 SUBMITTALS

- A. The Contractor shall submit to the Owner and Consultant the following prior to the pre-construction meeting:
 1. Submit a schedule which defines a timetable for executing and completing the project, including set-up, removal, cleanup, decontamination, and air clearance monitoring.
 2. Submit the identity of the hauling contractor and location of the landfill(s), recycling facilities etc. to be used.
 3. Submit a copy of a video, in a format agreed upon by Owner, showing the conditions of the buildings prior to the start of work. The contractor will be held responsible for all conditions shown on the DVD. The Owner reserves the right to video conditions directly before work commencement and hold such video as the only record of project conditions if warranted.
 4. Submit the plans and construction details for the construction of the decontamination enclosure systems and the isolation of the work areas as may be necessary for compliance with this specification and applicable regulations. Specifically address proposed controls (physical barriers, airtight barriers, signage, traffic flow etc.). Specifically address proposed means and methods for the removal of each material type identified.
 5. Submit copies of the training, licenses, medical and fit test records of each employee who may be on Site. If project managers, owners, or directors on behalf of the firm are going to be on-site all records shall be submitted for those individuals as well.
 6. Submit the qualifications of the air sampling professional that the Contractor proposes to use for this project to perform employee exposure monitoring.
 7. Submit detailed product information on all materials and equipment proposed for asbestos abatement work on this project.
 8. Submit pertinent information regarding the qualifications of the Project Supervisor (competent person) for this project as well as a list of past projects completed.
- B. The following shall be submitted to the Consultant during the work:

1. Copy of the results of personal air sampling (Consultant will not review or provide any direction or advice regarding results. The Contractor is responsible for proper review and personal protective equipment (PPE). Records are retained solely for project record).
 2. Copy of training, licenses, fit test records and medical records for new employees to start work (24 hours in advance) and prior to the new employee arriving at the Site.
 3. Carbon copy from waste shipment record, waste manifest records, bill of lading or other waste tracking record for all specified materials.
 4. Copy of daily log sheets, daily sign-in sheets, and containment entrance records.
- C. The following shall be submitted to the Consultant at the completion of work. Owner reserves right to retain payment(s) until all items are received in completion:
1. Submit to the Owner and Consultant, original final completed copies of the waste shipment records, signed by all transporters and the designated disposal site owner/operator.
 2. Submit to Owner and Consultant, original final completed copies of bill of lading, weight tickets, recycling tickets and manifests for all specified materials.
 3. Submit to the Consultant copies of all Contractor's logs (daily activity logs, daily sign in sheets, dive sheets) and all worker certifications, licenses, medical records and respirator fit tests.
 4. Submit to the Consultant copies of all OSHA personal monitoring results.

1.12 REGULATIONS AND STANDARDS

- A. The Contractor shall be solely responsible for conducting this project and supervising all work in a manner that will be in conformance with all federal, state, and local regulations and guidelines pertaining to asbestos abatement. Specifically, the Contractor shall comply with the requirements of the following:
1. U.S. Environmental Protection Agency (EPA) National Emission Standards for Hazardous Air Pollutants (NESHAP) Regulations (40 CFR 61, Subpart M);
 2. OSHA Asbestos Regulations (29 CFR 1910.1001 and 1926.1101);
 3. Connecticut Department of Energy and Environmental Protection (DEEP) Regulations (Section 22a-209-8 (i) and Section 22a-220 of the Connecticut General Statutes);
 4. Connecticut Department of Public Health (CTDPH) Standards for Asbestos Abatement Sections 19a-332a-1 to 19a-332a-16;
 5. CTDPH Standards for Asbestos Containing Materials in Schools Section 19a-333-1 to Section 19a-333-13 of the Regulations of Connecticut State Agencies;
 5. The 2003 International Building Code as adopted by the 2005 State of Connecticut Building Code including the 2009, 2011, 2013, 2016 and 2018 amendments;
 6. Life Safety Code, National Fire Protection Association (NFPA);
 7. Local health and safety codes, ordinances, or regulations pertaining to asbestos remediation and all national codes and standards including American Society of Testing and Materials (ASTM), American National Standards Institute (ANSI), and Underwriter's Laboratories (UL).

1.13 EXEMPTIONS

- A. Any deviations from these specifications require the written approval and authorization from the Owner and Consultant. Any deviations that may impact the bid cost shall be delineated in the bid for the Owner to review.

- B. Any modifications from the standard work practices identified in the CTDPH Standards for Asbestos Abatement, Sections 19a-332a-1 to 19a-332a-16, must be requested in writing, and approved in writing from the CTDPH. The Consultant shall develop the AWP on behalf of the Owner. If the Contractor plans to request an AWP for this project, it must be stated in the bid along with the nature of the AWP shall be disclosed in the bid documents and the cost savings associated with such AWP shall be provided for Owner's consideration. If it is not provided and was intended, the Owner can disqualify the bid. The Contractor cannot file an AWP without Owner and Consultant approval. An AWP will not be considered due to the Site utilization as a School. Work will be required to be conducted during the summer of 2020 and will be conducted when children/students are not on Site, therefore a request to the CTDPH to conduct asbestos abatement while school is in session will not be required.

1.14 FINAL AIR CLEARANCE

- A. Following the completion of the encapsulation phase of the work, the Consultant shall collect final air clearance samples inside the work area per CTDPH asbestos regulations. The Owner of the facility shall be responsible for payment of the sampling and analysis of the initial final air clearance samples only. Re-occupancy final air clearance sampling will be conducted for all the work areas. The Contractor shall be responsible for payment of all costs associated with the collection and analysis of additional final air clearance samples if the first set of samples fail to satisfy the clearance criteria. Contractor shall not conduct demolition or other removal activities during the air clearance. The Contractor shall assume air clearance results will be within 24 hours from the time the laboratory receives the samples for Transmission Electron Microscopy (TEM) analysis. With laboratory delivery and analysis this can be up to 48 hours after test collected.

1.15 NOTIFICATIONS, POSTINGS, SUBMITTALS, AND PERMITS

- A. The Contractor shall make the following notifications and provide the submittals to the following agency prior to the start of work. The CTDPH notification is required 10 calendar days prior to start of the abatement project and the EPA notification is required 10 business days prior to the start of the abatement project.

1. Connecticut Department of Public Health
410 Capitol Avenue
MS #51 AIR
P.O. Box 340308
Hartford, CT 06134-0308
2. United States Environmental Protection Agency (USEPA)
Jordan Alves (alves.jordan@epa.gov)
Region 1- New England (OEP05-2)
5 Post Office Square, Suite 100
Boston, MA 02109-3912

- B. The minimum information included in the notification to these agencies includes:

1. Name and address of building Owner/Operator
2. Building location
3. Building size, age, and use
4. Amount of asbestos to be removed
5. Work schedule, including proposed start and completion date
6. Asbestos removal procedures to be used

7. Name and location of disposal site for generated asbestos waste, residue, and debris

- C. During the project the notification shall be revised if any information changes and a revised copy sent to the CTDPH. The Owner and Consultant reserve the right to contact the CTDPH to confirm the Contractor filed the notification, the date filed, and confirm the copy on Site matches the copy sent to the CTDPH in its entirety. If discrepancies are found, work will cease until discrepancies are resolved.

1.16 WORK SITE SAFETY PLAN

- A. The Contractor shall establish a set of emergency procedures and shall post them in a conspicuous place at the Site. The safety plan should include provisions for the following:
1. Evacuation of injured workers.
 2. Emergency and fire exit routes from all work areas.
 3. Emergency first aid treatment.
 4. Local telephone numbers for emergency services including ambulance, fire, and police.
 5. A method to notify occupants of the buildings in the event of a fire or other emergency requiring evacuation of the buildings.
- B. The Contractor is responsible for training all workers in these procedures. The Consultant will not be responsible for the safety plan and will not review.

1.17 INDEPENDENT AIR SAMPLING AND ASBESTOS ABATEMENT MONITORING

- A. This section describes independent air sampling work being performed on behalf of the Owner. This work is not in the Contract Sum. This section describes air monitoring carried out by the Consultant to verify that the building beyond the work area and the outside environment remains uncontaminated. (Personal air monitoring required by OSHA is work to be performed by the Contractor and is within the Contract Sum). Negative exposure assessments will not be reviewed and/or approved by the Consultant and it is the Contractor's responsibility to determine its validity.
- B. The Consultant will be retained to conduct air monitoring to detect faults in the work area isolation such as:
1. Contamination of the building outside of the work area by airborne asbestos fibers.
 2. Failure of filtration or rupture in the differential pressure system.
 3. Contamination of air outside the building envelope by airborne asbestos fibers.
 4. Contamination of air outside a regulated work area by airborne asbestos fibers.

Should any of the above occur the Contractor shall immediately cease asbestos abatement activities until the fault is corrected. Do not recommence work until authorized by the Consultant.

- C. The Consultant will perform on-site monitoring throughout the course of the project, as follows:
1. All work procedures shall be continuously monitored by the Consultant to assure that areas outside the designated work locations in the building will not be contaminated.
 2. Prior to work on any given day, the Contractor's designated "competent person" shall discuss the day's work schedule with the Consultant to evaluate job tasks with respect to safety procedures and requirements specified to prevent contamination of the building or

the employees. This includes a visual survey of the work area and the decontamination of enclosure systems.

1.18 CONTRACTOR'S AIR SAMPLING RESPONSIBILITY

- A. The Contractor shall independently retain an air sampling professional or have a CTDPH licensed Asbestos Abatement Supervisor monitor airborne asbestos concentrations in the workers' breathing zone and to establish conditions and work procedures for maintaining compliance with OSHA Regulations 29 CFR 1910.1001 and 1926.1101.
- B. The Contractor shall document all air sampling results and provide a report to the Consultant within 48 hours after sample collection.
- C. All air sampling shall be conducted in accordance with methods described in OSHA Regulations 29 CFR 1910.1001 and 1926.1101.

1.19 PROPER WORKER PROTECTION

- A. This section describes the equipment and procedures required for protecting workers against asbestos contamination and other workplace hazards except for respiratory protection.
- B. All workers are to be accredited as Abatement Workers as required by the Asbestos Hazard Emergency Response Act (AHERA) regulation 40 CFR 763 Appendix C to Subpart E.
- C. The Contractor is required to be certified and accredited as required by the CTDPH.
- D. In accordance with 29 CFR 1926, all workers shall receive a training course covering the dangers inherent in handling asbestos, the dangers of breathing asbestos dust, proper work procedures, and proper worker protective measures. This course must include, but is not limited to, the following:
 - 1. Methods of recognizing asbestos
 - 2. Health effects associated with asbestos
 - 3. Relationship between smoking and asbestos in producing lung cancer
 - 4. Nature of operations that could result in exposure to asbestos
 - 5. Importance of and instruction in the use of necessary protective controls, practices, and procedures to minimize exposure including:
 - a. Engineering controls
 - b. Work Practices
 - c. Respirators
 - d. Housekeeping procedures
 - e. Hygiene facilities
 - f. Protective clothing
 - g. Decontamination procedures
 - h. Emergency procedures
 - i. Waste disposal procedures
 - 6. Purpose, proper use, fitting, instructions, and limitations of respirators as required by 29 CFR 1910.134
 - 7. Appropriate work practices for the work
 - 8. Requirements of medical surveillance program
 - 9. Review of 29 CFR 1926

10. Pressure Differential Systems
 11. Work practices including hands-on or on-job training
 12. Personal Decontamination procedures
 13. Air monitoring, personal and area
- E. The Contractor shall provide medical examinations for all workers who may encounter an airborne fiber level of 0.10 f/cm³ or greater for an 8 hour Time Weighted Average (TWA). In the absence of specific airborne fiber data provide medical examinations for all workers who will enter the Work Area for any reason. Examination shall, at a minimum, meet OSHA requirements as set forth in 29 CFR 1926. In addition, provide an evaluation of the individual's ability to work in environments capable of producing heat stress in the worker.
- F. Submit the following to the Consultant for review. The Contractor shall not start work until these submittals are returned indicating that they are approved.
1. Submit copies of certificates from an EPA-approved AHERA Abatement Workers course for each worker as evidence that each asbestos Abatement Worker is accredited as required by the AHERA Regulation 40 CFR 763 Appendix C to Subpart E.
 2. Submit evidence that the Contractor is certified to perform asbestos abatement work by the CTDPH.
 3. Submit documents verifying that each worker has had a medical examination within the last 12 months as part of compliance with OSHA medical surveillance requirements. Submit, at a minimum, for each worker the following:
 - a. Name and Social Security Number
 - b. Physicians Written Opinion from examining physician including at a minimum the following:
 - 1) Whether worker has any detected medical conditions that would place the worker at an increased risk of material health impairment from exposure to asbestos.
 - 2) Any recommended limitations on the worker or on the use of personal protective equipment such as respirators.
 - 3) Statement that the worker has been informed by the physician of the results of the medical examination and of any medical conditions that may result from asbestos exposure.
 4. Copy of information that was provided to physician in compliance with 29 CFR 1926.
 5. Statement that worker is able to wear and use the type of respiratory protection proposed for the project and is able to work safely in an environment capable of producing heat stress in the worker.
- G. Submit certification signed by an officer of the abatement-contracting firm and notarized those exposure measurements, medical surveillance, and worker training records are being kept in conformance with 29 CFR 1926.
- H. The Contractor shall maintain control of and be responsible for access to all work areas to ensure the following requirements:
1. Non-essential personnel are prohibited from entering the area.
 2. All authorized personnel entering the work area shall read the "Worker Protection Procedures" which are posted at the entry points to the enclosure system and shall be equipped with properly fitted respirators and protective clothing.

3. All personnel who are exiting from the decontamination enclosure system shall be properly decontaminated.
4. Asbestos waste that is taken out of the work area must be properly bagged and labeled in accordance with these specifications. The surface of the bags shall be decontaminated. Asbestos leaving the enclosure system must be immediately transported off site or immediately placed in locked, posted temporary storage on site, and removed within 24 hours of the project conclusion.
5. Any material, equipment, or supplies that are brought out of the decontamination enclosure system shall be cleaned and decontaminated by wet cleaning and/or High Efficiency Particulate Air (HEPA) vacuuming of all surfaces.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name and product technical description.
- B. Damaged or deteriorating materials shall not be used and shall be removed from the premises. Material that becomes contaminated with asbestos shall be decontaminated or disposed of as asbestos waste.
- C. Polyethylene sheet in a roll size to minimize the frequency of joints shall be delivered to the Site with factory label indicating 4 or 6 mil.
- D. Polyethylene disposable bags shall be six (6) mil with pertinent pre-printed label and bags shall be properly secured to prevent leaks.
- E. Tape or adhesive spray will be capable of sealing joints in adjacent polyethylene sheets and for attachment of polyethylene sheet to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions including use of amended water.
- F. Surfactant (wetting agent), shall consist of fifty (50) percent polyoxyethylene ether and fifty (50) percent polyoxyethylene ester, or equivalent, and shall be mixed with water to provide a concentration of one (1) ounce surfactant to five (5) gallons of water or as directed by manufacturer.
- G. Removal encapsulant shall be non-flammable factory prepared penetrating chemical encapsulant found acceptable to EPA. Usage shall be in accordance with manufacturer's printed technical data.
- H. The Contractor shall have available spray equipment capable of mixing wetting agent with water and capable of generating sufficient pressure and volume and having sufficient hose length to reach all areas with asbestos.
- I. Impermeable containers are to be used to receive and retain any asbestos-containing or contaminated materials until disposal at an acceptable disposal site. The containers shall be labeled in accordance with OSHA Standard 29 CFR 1926.1101 (k) (8) (ii) [June 1, 2015 requirements]. Containers must be both air and watertight.
- J. Labels and signs, as required by OSHA Standard 29 CFR 1926.1101 will be used.

- K. Encapsulant shall be bridging or penetrating type which has been found acceptable to the Consultant. Usage shall be in accordance with manufacturer's printed technical data.
- L. HEPA filtered local exhaust ventilation shall be utilized during the installation of enclosures and supports where ACM may be disturbed.

2.2 TOOLS AND EQUIPMENT

- A. The Contractor shall provide all tools and equipment necessary for asbestos removal, encapsulation, and enclosure. All equipment transported to the Site shall be clean.
- B. The Contractor shall have air-monitoring equipment of type and quantity to monitor operations and conduct personnel exposure surveillance per OSHA requirements. The equipment shall properly function and air samples calibrated with a primary calibrated rotometer.
- C. The Contractor shall have available sufficient inventory or dated purchase orders for materials necessary for the job including but not limited to protective clothing, respirators, filter cartridges, polyethylene sheeting of proper size and thickness, tape and air filters.
- D. The Contractor shall provide (as needed) temporary electrical power panels, electrical power cables, and electrical power sources (such as generators). Any electrical connection work affecting the building electrical power system shall be performed by a State of Connecticut licensed electrician. Contractor responsible for coordinating electrical service and water service and shall pay for services during work duration. All tools and equipment necessary for the Consultant to conduct inspections, final visual inspections, and final air clearance monitoring shall be provided to the Consultant. Such items include but are not limited to: source of electricity, extension cords, electrical adapters, splitters, ladders, personal protective equipment (PPE), etc. The Consultant reserves the right to reject such items that are not safe and/or do not function appropriately and request items be replaced with sufficient equipment. Areas shall be safe to enter/occupy by the Consultant.
- E. The Contractor shall have available shower stalls and plumbing to support frame to include sufficient hose length and drain system or an acceptable alternate.
- F. Exhaust air filtration system units shall contain HEPA filter(s) capable of sufficient air exhaust to create negative pressure of -0.02 inches of water column within enclosure with respect to outside area. Digital manometers shall be supplied for Class I work. Equipment shall be checked for proper operation by smoke tubes or differential pressure gauge before the start of each shift and at least twice during the shift. Adequate exhaust air shall be provided for a minimum of four (4) air changes per hour within the enclosure. No air movement system or air filtering equipment shall discharge unfiltered air outside.
- G. Vacuum units, of suitable size and capacities for the project, shall have HEPA filter(s) capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of 0.3 micrometers in diameter or larger.
- H. The Contractor will have reserve units so that the station system will operate continuously.

PART 3 – EXECUTION

3.1 PRE-ABATEMENT MEETING

- A. At least one week prior to the start of work a Pre-Construction Meeting will be scheduled and must be attended by the Contractor and any Sub-Contractors. The assigned Contractor Site Supervisor is also required to attend this meeting.
- B. The Contractor shall present a detailed project schedule and project submittals at the Pre-Construction Meeting. Variations, amendments, and corrections to the presented schedule will be discussed, and the Owner and Consultant will inform the Contractor of any scheduling adjustments for this project.
- C. Following the Pre-Construction Meeting, the Contractor shall submit a revised schedule (if needed) no later than one week after the meeting.

3.2 WORK AREA PREPARATION

- A. Where necessary shut down electrical power including receptacles and light fixtures. Under no circumstances during the decontamination procedures will lighting fixtures be permitted to be operating when the spraying of amended water may contact the fixture. Provide ground fault circuit interrupter (GFCI) devices, temporary power, and temporary lighting installed in compliance with the applicable electrical codes. All installations are to be made by a State of Connecticut licensed electrician.
- B. Shut down and/or isolate heating, cooling, and ventilation (HVAC) air systems or zones to prevent contamination and fiber dispersal to other areas of the structure. During the work, critical barriers with duct tape and polyethylene sheeting shall be installed on vents within the work area.
- C. The Contractor shall be responsible for removing garbage, furniture, equipment any other materials not to be salvaged. The Contractor shall pre-clean moveable objects within the proposed work areas using HEPA vacuum equipment and/or wet cleaning methods as appropriate and remove such objects from work areas to a temporary location if necessary. Any demolition of materials to gain access to ACM or to accommodate work shall be performed when the work containment has been approved by the Consultant to prevent disturbance of asbestos (e.g. cove base moldings, cabinets, wall systems, counters, ceilings, equipment etc.).
- D. Seal off all openings, including, but not limited to, windows, corridors, doorways, skylights, ducts, grills, diffusers, and any other penetration of the work areas, with polyethylene sheeting layer(s) a minimum of six (6) mils thick, sealed with duct tape. This includes doorways and corridors that will not be used for passage during work areas and occupied areas.
- E. Pre-clean fixed objects within the work areas, using HEPA vacuum equipment and/or wet cleaning methods as appropriate, and enclose with a minimum six (6) mil plastic sheeting(s) sealed with duct tape.
- F. Clean the proposed work areas using HEPA vacuum equipment or wet cleaning methods as appropriate. Do not use methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters.

- G. After HEPA vacuum cleaning, cover fixed walls with two (2) layers of four (4) mil polyethylene sheeting to the floor level. Where fixed walls are not used, three layers of six (6) mil polyethylene sheeting will be applied to a rigid framework of wood, metal, or PVC. Where flooring materials are not being abated, cover the floor with two (2) layers of six-mil polyethylene sheeting. All overlaps shall be sealed with tape and spray adhesive. Install two (2) layers of four (4) mil polyethylene sheeting to cover ceiling (prevent contamination of ceiling materials, e.g. tiles, plaster etc.).
- H. Maintain emergency and fire exits from the work areas, or establish alternate exits satisfactory to fire officials.
- I. Clean and remove ceiling mounted objects, such as lights and other items not sealed off that interfere with asbestos abatement. Use hand-held amended water spraying or HEPA vacuuming equipment during fixture removal to reduce settled fiber dispersal.
- J. Create pressure differential between work areas and uncontaminated areas by the use of acceptable negative air pressure equipment sufficient to provide four (4) air changes per hour and pressure of at least -0.02 inches of water column as determined by appropriate gauge.

3.3 DECONTAMINATION SYSTEM

- A. The Contractor shall establish contiguous to the work area a decontamination enclosure consisting of equipment room, shower room, and clean room in series. The only access between contaminated and uncontaminated areas shall be through this decontamination enclosure. If it is not feasible to set-up a contiguous decontamination unit the Contractor shall establish a remote decontamination unit. "Feasible" means not possible in this respect.
- B. Access between rooms in the decontamination system shall be through double-flap curtain openings. The clean room, shower and equipment room within the decontamination enclosure, shall be completely sealed ensuring that the sole source of airflow through this area originates from uncontaminated areas outside the work area.
- C. The Contractor shall establish contiguous with the work area an equipment decontamination enclosure consisting of two totally enclosed chambers divided by double flap curtained opening. This enclosure must be constructed so as to ensure no personnel enter or exit through this unit.
- D. Building spaces not within the work areas shall be separated from asbestos abatement work areas by means of airtight barriers.
- E. Construct the decontamination system with wood or metal framing, 3/8" sheathing and cover both sides with a double layer of six-mil polyethylene sheeting, spray glued and taped at the joints.
- F. The Contractor shall visually inspect barrier several times daily to assure effective seal and the Contractor shall repair defects immediately.

3.4 ASBESTOS REMOVAL PROCEDURE – GENERAL

- A. The Contractor shall have a designated "competent person" on the job at all times to ensure establishment of a proper enclosure system and proper work practices throughout project.

- B. Abatement work shall be properly coordinated with the Phasing of work on this project, other trades, new construction, and Site use. The Contractor shall be responsible for addressing any concerns by the Owner and/or Consultant.
- C. Spray asbestos materials with amended water using airless spray equipment or apply approved removal wetting agent to reduce the release of fibers during removal operation.
- D. In order to maintain indoor asbestos concentrations to the minimum, the wet asbestos must be removed in manageable sections. Material drop shall not exceed eight feet. For heights up to 15 feet, provide inclined chutes or scaffolding to intercept drop.
- E. Remove asbestos containing materials as appropriate by standard methods. Fill disposal containers as removal proceeds; seal filled containers and clean containers before removal to equipment decontamination system. Wet clean each container thoroughly, double bag and apply caution label. Ensure that workers do not exit the work area through the equipment decontamination enclosure.
- F. After completion of stripping work, all surfaces from which asbestos has been removed shall be wet brushed, using a nylon brush, wet wiped, and sponged or cleaned by an equivalent method to remove all visible material (wire brushes are not permitted). During this work, the surfaces being cleaned shall be kept wet.
- G. Remove and containerize all visible accumulations of asbestos-containing and/or asbestos-contaminated debris.
- H. Sealed disposal containers and all equipment used in the work area shall be included in the cleanup and shall be removed from work areas via the equipment decontamination enclosure at an appropriate time in the cleaning sequence. All asbestos waste in 6-mil polyethylene disposal bags shall be double bagged in the equipment decontamination enclosure before removal from the Site.
- I. At any time during asbestos removal should the Consultant suspect contamination of areas outside the work area(s) he/she shall have the authority to cause all abatement work to stop until the Contractor takes steps to decontaminate these areas and eliminate the causes of such contamination. Unprotected individuals shall be prohibited from entering suspected contaminated areas until air sampling and visual inspections certify decontamination.
- J. After completion of the initial final cleaning procedure including removal of the inner layers of polyethylene sheeting, but prior to encapsulation, a pre-sealant inspection shall be conducted by the Consultant. The pre-sealant inspection shall verify that ACM and residual dust has been removed from the work area.

3.5 ASBESTOS REMOVAL PROCEDURES

- A. Prior to asbestos removal the Contractor shall ensure that work area preparation has been conducted in accordance with Section 3.2 and 3.3 of this Specification.
- B. The Contractor shall demolish/remove components that are necessary to access the asbestos containing/contaminated materials and/or facilitate establishing the work area for example but not limited to wall materials, counters, cabinets, etc. If any of the materials to be removed to access asbestos and/or to facilitate establishing the work area are contaminated with asbestos

debris the materials shall be cleaned appropriately or disposed of as asbestos waste. Upon removal other contaminants could be encountered and the Contractor shall assure proper safety measures are utilized (e.g. mold, etc.). The Contractor shall assure all ACM that can be removed from the structure prior to work conducted by other trades. The Contractor shall conduct any work requested by the Consultant to observe conditions (e.g. wall cuts, isolated demolition, etc.).

- C. The Contractor shall wet surfaces with amended water or detergent solution so that entire surface is wet. Do not allow puddling or run-off to other areas or create a slip hazard. If a detergent is used, use in strict accordance with manufacturer's instructions.
- D. The Contractor shall keep asbestos continuously wet throughout removal operation and do so in a manner that does not create a safety hazard and does not cross-contaminate other areas with waste water. In addition, water will be managed to prevent release to drainage systems, soils, groundwater, surface water etc. All water shall be properly filtered.
- E. Pick up removed asbestos in a timely manner and place in labeled disposal bags and/or other equivalent disposal container. Waste shall be secured at the end of each work shift in a locked waste container outside of the building. No waste shall be left in the building.

3.6 CONSULTANT'S RESPONSIBILITIES

- A. Air sampling will be conducted by the Consultant to ascertain the integrity of controls that protect the building from asbestos contamination. Independently, the Contractor shall monitor air quality within the work area to ascertain the protection of employees and to comply with OSHA regulations.
- B. The Consultant's air sampling professional will collect and analyze air samples during two time periods:
 - 1. Abatement Period. The Consultant's project monitor shall collect samples on a daily basis during the work period which will also be mandated under an approval to conduct abatement while children/students utilize the Site. A sufficient number of area samples shall be taken outside of the work area, at the exhaust of the negative pressure system and outside of the building to judge the degree of cleanliness or contamination of the building during removal. Additional samples may be taken inside the work area and decontamination enclosure system at the discretion of the Consultant and Owner or as part of the CTDPH variance approval. If background samples exceed the limit of detection or are overloaded, the Contractor shall be responsible for all costs and time associated with remediating the areas established as impacted requiring cleaning/abatement.
 - 2. Post-Abatement Period. The Consultant's project monitor shall conduct air sampling following the final cleanup phase of the project, once the "no visible residue" criterion, as established by the Consultant, has been met. Five (5) samples shall be collected inside the work area utilizing aggressive methods to comply with the CTDPH Standards for Asbestos Abatement, Sections 19a-332a-12, and 19a-332a-13. Analysis of the samples to determine airborne concentrations of asbestos shall be conducted by Transmission Electron Microscopy (TEM) method with an average limit of less than 70.0 structures per square millimeter of filter surface or by Phase Contrast Microscopy (PCM) with a limit of 0.010 fibers per cubic centimeters of air in accordance with the CTDPH Asbestos Abatement regulations.

- C. If the Consultant determines that the building has become contaminated from the project, he/she shall immediately inform the Contractor to cease all removal operations and implement a work stoppage clean up procedure. The Contractor shall conduct a thorough cleanup of the areas of the building designated by the Consultant. No further removal work can take place until the project monitor has assessed that the building air has been decontaminated.

3.7 CONSULTANT'S INSPECTION RESPONSIBILITIES

- A. The Consultant will conduct inspection throughout the progress of the abatement project. Inspections shall be conducted in order to document the progress of the abatement work as well as the procedures and practices employed by the Contractor.
- B. The Consultant will perform the following inspections during the course of abatement activities:
 - 1. Pre-commencement Inspection. Pre-commencement inspections shall be performed at the time requested by the Contractor. The Consultant shall be informed 24 hours prior to the time the inspection is needed. If, during the course of the pre-commencement inspection, deficiencies are found, the Contractor shall perform the necessary adjustments in order to obtain compliance.
 - 2. Work Area Inspections. Work area inspections shall be conducted on a daily basis at the discretion of the Consultant. During the course of the work inspections, the Consultant shall observe the Contractor's removal procedures, verify barrier integrity, monitor negative air filtration devices, assess project progress, and inform the Contractor of specific remedial activities if deficiencies are noted.
 - 3. Pre-sealant Inspection. The Consultant, upon the request of the Contractor, shall conduct a pre-sealant inspection. The Consultant shall be informed 24 hours prior the time that the inspection is needed. The pre-sealant inspection shall be conducted after completion of the initial cleaning procedures, but prior to encapsulation. The pre-sealant inspection shall verify that all ACM and residual debris have been removed from the work area. If, during the course of the pre-sealant inspection, the Consultant identifies residual dust or debris, the Contractor shall comply with the request of the Consultant in order to render the area "dust free".
 - 4. Final Visual Inspection. The Consultant, upon request of the Contractor and the Contractor signing the Consultant's final visual inspection form, shall conduct a final visual inspection. If residual dust or debris is identified during the course of the final inspection, the Contractor shall comply with the request of the Consultant in order to render the area "dust free".

3.8 CLEARANCE AIR TESTING

- A. After the visual inspection is completed and all surfaces in the abatement area have dried final air clearance sampling shall be performed by the Consultant. Aggressive air monitoring will be used. Selection of location and of samples shall be at the discretion of the Consultant. Air monitoring volumes shall be sufficient to provide a detection limit of 0.010 f/cc using NIOSH-approved method for PCM analysis. For air clearance by TEM, air-monitoring volumes shall be sufficient to provide a detection limit of 0.005 f/cm³ using the analysis method set forth in the AHERA regulation 40 CFR Part 763 Appendix A.
- B. Areas which do not pass the inspection for completeness of abatement shall continue to be cleaned by and at the Contractor's expense until it is achieved as evidenced by Consultant visual

inspection and results of air testing as previously specified. Contractor shall notify Consultant when re-cleaning will commence.

- C. The Contractor shall properly schedule abatement work and other site activities at appropriate times and locations to prevent cross-contamination and/or dust in areas the Consultant is air testing. Adjacent disturbance activities can cause work area samples to be overloaded or above detection limit. In addition, work areas would require re-cleaning by the Contractor at no expense to the Owner.

3.9 DISPOSAL OF ASBESTOS

- A. All disposal of asbestos-containing and/or asbestos contaminated material within the State of Connecticut must be in compliance with requirements of and authorized by the Waste Engineering & Enforcement Division (WEED), Department of Energy and Environmental Protection (DEEP), and the State of Connecticut.
- B. Disposal approvals shall be obtained before commencing asbestos removal.
- C. A copy of approved disposal authorization shall be provided to the Owner and Consultant and any required federal, state, or local agencies.
- D. Provide required copies of waste shipment records to the Owner. Manifests must be reviewed by the Consultant and approved prior to shipping. An Owner's representative must sign the manifest after review and be provided a copy at the time of signature.
- E. Copies of all Waste Shipment Records will be retained by the Consultant as part of the project file. A copy of each shipment record will be provided to the Consultant prior to any waste leaving the site. The landfill operator on receipt will sign the receipts and the quantity of asbestos debris leaving the job site and arriving at the landfill acknowledged. The Contractor shall document the specific amount of waste on each manifest, portion of the site building it was generated from and type of waste. Coordinate designations with Consultant.
- F. All asbestos debris shall be transported in covered, sealed vans, boxes, or dumpsters, which are physically isolated from the driver by an airtight barrier. Polyethylene sheeting shall be secured to the floor, walls, and ceilings. All dumpsters shall be lined immediately before any waste is introduced. All vehicles must be properly licensed to meet Department of Transportation (DOT) requirements.
- G. Any vehicles used to store or transport ACM will either be removed prior to the end of the work shift or securely locked and posted to prevent disturbance.
- H. Any incident and/or accident that may result in spilling or exposure of asbestos waste outside the containment, on and off the Site and all related issues are the sole responsibility of the Contractor. Any incident and/or accident and/or means or methods that may result in a release of asbestos from the work area/regulated area are the sole responsibility of the Contractor.

END OF SECTION 028200

SECTION 028319 – LEAD AWARENESS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. General Provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- B. Section 028200 – Asbestos Abatement. Refer to the *Hazardous Building Materials Inspection Report* for the Site.

1.2 SUMMARY OF WORK

- A. Work of this Section includes requirements for worker protection and waste disposal related to renovation activities involving lead containing building components and surfaces utilizing greater than or equal to 1.0 mg/cm² by X-ray fluorescence (XRF) as the regulatory level (the “Work) impacted during the renovation at Hebron Elementary School located at 92 Church Street, Hebron, CT (the “Site”).
- B. Required training of all workers involved in the disturbance of lead containing ceramic wall tiles and lead solder during abatement of asbestos pipe insulation or the install new plumbing shall have completed a minimum of 8 hours of training (Lead Safe Renovator) training in accordance with the Environmental Protection Agency (EPA). The Contractor shall be an EPA Certified Lead Safe Renovator or shall be a licensed Lead Abatement Contractor in accordance with the Connecticut Department of Public Health (CTDPH).
- C. The EPA Renovation, Repair, and Painting (RRP) requirements apply to buildings that are target housing or child-occupied facilities with children under the age of six. The Site is currently utilized as an elementary school and is considered a child occupied structure.
- D. The removal of ceramic wall tiles may result in dust and debris exposing workers to levels of lead above the Occupational Safety and Health Administration (OSHA) "Action Level". Worker protection, training, and engineering controls referenced herein shall be strictly adhered to, until completion of exposure assessment with results indicating exposures below the “Action Level”.
- E. The following lead containing building materials shall be addressed at the Site are as follows:
 - 1. Black 4” Ceramic Tile Cove Base (1947 Wing – Boys’ and Girls’ Lavatories);
 - 2. Pink and Blue 4” Ceramic Wall Tile (1963 Wing – Boys’ and Girls’ Lavatories); and
 - 3. Lead solder on plumbing lines (throughout the 1947, 1957 and 1963 Wings).
- F. Walls that require to be opened for plumbing shall have ceramic wall tile completely removed along the entire wall to accommodate new ceramic tile installations by others. The Contractor shall use caution to leave a clean tile line on adjacent intersecting walls to allow a clean, undamaged adjacent surface for new wall tile installations to abut. Contractor shall not damage floor ceramic tiles.

- G. Responsibilities of Lead-Safe Renovation Contractors: The responsible party of the Lead-Safe Renovation Contractor or other entity conducting renovation work shall ensure the following:
1. All persons performing renovation work are responsible persons or employees of the Lead-Safe Renovation Contractors.
 2. A person who is Certified as a Lead-Safe Renovator Supervisor or a licensed Lead Abatement Supervisor (hereinafter referred to as Supervisor) shall be assigned to the project for each contractor performing renovation work where lead paint is to be disturbed and be on-site at all times during Lead-Safe Renovation Work.
 3. All workers performing Lead-Safe Renovation shall be Certified as Lead-Safe Renovator Supervisors or have received requisite training as required by EPA or CTDPH regulations.
 4. Prior to the start of work the Lead-Safe Renovation Contractor shall ensure pre-renovation notification requirements for providing EPA Pamphlet are followed.
 5. The Lead-Safe Renovation Contractor and Supervisor shall ensure that lead safe work practice requirements are utilized in accordance with EPA RRP Rule and CTDPH regulations.
 6. The required recordkeeping documentation of the Lead-Safe Renovation work shall be maintained as required.
- H. Responsibilities of Lead-Safe Renovation Supervisors: The responsible party of the Lead-Safe Renovation Contractor shall ensure the following:
1. The Supervisor shall be assigned to the project for each contractor performing renovation work where lead paint is to be disturbed and be on site at all times during Lead-Safe Renovation Work.
 2. The Lead Safe Renovation Supervisor shall oversee and ensure that lead safe work practice requirements are utilized in accordance EPA RRP Rule and CTDPH regulations.
 3. Upon the completion of work conduct the required visual clearance inspection and cleaning verification as required by the RRP Rule.
- I. Lead containing building components should be segregated from the general waste stream for sample collection and analysis by TCLP to determine proper off-site waste disposal. If disturbed and managed off-site, non-porous LBP-coated building materials (i.e., metals) may be segregated and recycled as scrap metal. Metal LBP-coated building components cannot be subject to grinding, sawing, drilling, sanding, or torch cutting.
- J. Metal components with lead containing solder should be recycled. The Contractor shall make sure that they have contacted the recycling facility they are going to retain to receive the material generated on this project to be assured the facility can accept metal with lead solder as part of the scrap metal exemption. If the facility cannot accept it and they still choose to use the facility, the Contractor shall isolate lead solder and dispose of as RCRA lead waste. Any associated water containing items (without solder) will be flushed of water prior to removal and would not be considered hazardous waste for disposal.
- K. Ceramic wall tiles have not been analyzed by TCLP. The Contractor shall assume the ceramic tiles will be disposed of as a RCRA lead waste.

1.3 DEFINITIONS

- A. The following definitions relative to lead paint as used in this Section are offered:

1. ACTION LEVEL (AL): The allowable employee exposure, without regard to use of respiratory protection, to an airborne concentration of lead over an eight (8) hour time weighted average (TWA), as defined by OSHA. The current action level is thirty micrograms per cubic meter of air ($30 \mu\text{g}/\text{m}^3$).
2. AREA MONITORING: The sampling of lead concentrations, which is representative of the airborne lead concentrations that may reach the breathing zone of personnel potentially exposed to lead.
3. BIOLOGICAL MONITORING: The analysis of a person's blood and/or urine, to determine the level of lead concentration in the body.
4. CHANGE ROOM: An area provided with separate facilities for clean protective work clothing and equipment and for street clothes which prevents cross-contamination.
5. COMPETENT PERSON: A person employed by the Contractor who is capable of identifying existing and predictable lead hazards in the surroundings or working conditions, and who has authorization to take prompt corrective measures to eliminate them as defined by OSHA.
6. EXPOSURE ASSESSMENT: An assessment conducted by an employer to determine if any employee may be exposed to lead at or above the action level.
7. "HIGH EFFICIENCY PARTICULATE AIR" (HEPA): A type of filtering system capable of filtering out particles of 0.3 microns diameter from a body of air at 99.97% efficiency or greater.
8. LEAD: Refers to metallic lead, inorganic lead compounds and organic lead soaps. Excluded from this definition are other organic lead compounds.
9. LEAD WORK AREA: An area enclosed in a manner to prevent the spread of lead dust, paint chips, or debris resulting from lead-containing paint disturbance.
10. LEAD PAINT: Refers to paints, glazes, and other surface coverings containing a toxic level of lead.
11. PERMISSIBLE EXPOSURE LIMIT (PEL): The maximum allowable limit of exposure to an airborne concentration of lead over an eight (8) hour time weighted average (TWA), as defined by OSHA. The current PEL is fifty micrograms per cubic meter of air ($50 \mu\text{g}/\text{m}^3$). Extended workdays lower the PEL by the formula: PEL equals 400 divided by the number of hours of work.
12. PERSONAL MONITORING: Sampling of lead concentrations within the breathing zone of an employee to determine the 8-hour time weighted average concentration in accordance with 29 CFR 1926.62 and 29 CFR 1910.1025. Samples shall be representative of the employee's work tasks. Breathing zone shall be considered an area within a sphere with a radius of 18 inches and centered at the nose or mouth of an employee.
13. RESOURCE CONSERVATION AND RECOVERY ACT (RCRA): RCRA establishes regulatory levels of hazardous chemicals. There are eight (8) heavy metals of concern for disposal: arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. Six (6) of the metals are typically found in paints, excluding selenium and silver.
14. TOXIC LEVEL OF LEAD: A level of lead, when present in dried paint or plaster, contains a level of lead greater than or equal to than 0.50% by dry weight as measured by atomic absorption spectrophotometry (AAS) or $1.0 \text{ mg}/\text{cm}^2$ as measured by on-site testing utilizing an x-ray fluorescence analyzer. (Term is specific to State of CT regulations and HUD guidelines only)
15. TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP): The U.S. Environmental Protection Agency (USEPA) required sample preparation and analysis for determining the hazard characteristics of a waste material.

1.4 REGULATIONS AND STANDARDS

- A. The following regulations, standards, and ordinances of federal, state, and local agencies are applicable and made a part of this specification by reference:
1. American National Standards Institute (ANSI)
 - a. ANSI 288.2 – 1980 Respiratory Protection
 2. Code of Federal Regulation (CFR)
 - a. 29 CFR 1910.134 – Respiratory Protection
 - b. 29 CFR 1910.1025 – Lead
 - c. 29 CFR 1926.62 – Lead in Construction Interim Final Rule
 - d. 29 CFR 1910.1200 – Hazard Communication
 - e. 29 CFR 1926.59 – Hazard Communication in Construction
 - f. 29 CFR 1926.55 – Gases, Vapors, Fumes, Dusts, and Mists
 - g. 29 CFR 1926.57 – Ventilation
 - h. 40 CFR 260 – Hazardous Waste Management Systems: General
 - i. 40 CFR 261 – Identification and Listing of Hazardous Waste
 - j. 40 CFR 262 – Generators of Hazardous Waste
 - k. 40 CFR 263 – Transporters of Hazardous Waste
 - l. 40 CFR 264 – Owner and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
 - m. 40 CFR 265 – Interim Statutes for Owner and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
 - n. 40 CFR 268 – Lead Disposal Restrictions
 - o. 40 CFR 172 – Hazardous Materials Tables and Communication Regulations
 - p. 40 CFR 178 – Shipping Container Specifications
 - q. 40 CFR 270 and 124 – Hazardous Waste Permits
 - r. Underwriters Laboratories, Inc. (UL)
 - s. UL586 – 1990 High Efficiency Particulate Air Filter Units

1.5 QUALITY ASSURANCE

- A. Hazard Communication Program: The Contractor shall establish and implement a Hazard Communication Program as required by 29 CFR 1926.59.
- B. Compliance Plan (Site Specific): The Contractor shall establish a written compliance plan, which is specific to the project site, to include the following:
1. Methods of engineering controls to be used to control lead exposure.
 2. The proposed technology the Contractor will implement in meeting the PEL.
 3. Air monitoring data documenting the source of lead emissions.
 4. A detailed schedule for implementing the program, including documentation of appropriate supply of equipment, etc.
 5. Proposed work practice, which establishes proper protective work clothing, hygiene facilities, and practices.
 6. Worker rotation schedule, if proposed, to reduce TWA.
 7. A description of methods for informing workers of potential lead exposure.
- C. Medical Examinations:
1. Before exposure to lead contaminated dust, provide workers with a comprehensive medical examination as required by 29 CFR 1910.1025 and 29 CFR 1926.62.

2. The examination shall not be required if adequate records show that employees have been examined as required by 29 CFR 1926.62 within the last year.
 3. Medical examination shall include, at a minimum, approval to wear respiratory protection and biological monitoring.
- D. Training: The Contractor shall ensure that workers are trained to perform lead paint disturbing activities and disposal operations prior to the start of work in accordance with 29 CFR 1926.62. The Contractor shall be a Certified Lead Safe Renovator and all workers shall have Lead Safe Renovator 8 hour training in accordance with EPA or the Contractor shall be a CT DPH licensed Lead Abatement Contractor and all workers CT DPH licensed Lead Abatement Workers.
- E. Respiratory Protection Program:
1. The Contractor shall furnish each employee required to wear a negative pressure respirator with a respirator fit test at the time of initial fitting and at least once every six (6) months thereafter as required by 29 CFR 1926.62.
 2. The Contractor shall establish a Respiratory Protection Program in accordance with ANSI Z88.2, 29 CFR 1910.134, and 29 CFR 1926.62.

1.6 SUBMITTALS

- A. The Contractor shall submit to the Owner and Consultant the following submittals prior to start of work:
1. Copies of medical records for each employee to be used on the project, including results of biological monitoring and a notarized statement by the examining physician that such an examination took place.
 2. Copies of workers' training certificates.
 3. Submit record of successful respirator fit testing performed by a qualified individual within the previous six (6) months, for each employee to be used on this project with the employee's name and social security number with each record.
 4. The name and address of Contractor's blood lead testing lab, OSHA-CDC listing, and Certification in the State of Connecticut.
 5. The name and address of Contractor's personal air monitoring and waste disposal lead testing laboratory/ies.
 6. Name, address, and ID number of the hazardous waste hauler, waste transfer route, and proposed disposal site.
- B. The Contractor shall submit to the Owner/Consultant the following submittals during the job:
1. Results from personal air samples.
 2. Medicals, certificates, and fit test 24 hours in advance of any new employee starting on the project.
- C. The Contractor shall submit to the Consultant the following submittals upon completion of the work:
1. Copies of manifests, receipts, recycling certificates acknowledging disposal of all waste material from the project showing delivery date, quantity, and appropriate signature of landfills or recycling facility authorized representative.

1.7 PERSONAL PROTECTION

A. Exposure Assessment:

1. The Contractor shall determine if any worker will be exposed to lead at or above the action level.
2. The exposure assessment shall identify the level of exposure a worker would be subjected to without respiratory protection.
3. The exposure assessment shall be achieved by obtaining personal monitoring samples representative of a full shift at least (8-hour TWA).
4. During the period of the exposure assessment, the Contractor shall institute the following procedures for protection of workers:
 - a. Protective clothing shall be utilized
 - b. Respiratory protection
 - c. Change areas shall be provided
 - d. Hand washing facilities and shower
 - e. Biological monitoring
 - f. Training of workers

B. Respiratory Protection:

1. The Contractor shall furnish appropriate respirators approved by the National Institute of Occupational Safety and Health (NIOSH)/Mine Safety and Health Administration (MSHA) for use in atmospheres containing lead dust.
2. Respirators shall comply with the requirements of 29 CFR 1926.62.
3. Workers shall be instructed in all aspects of respiratory protection.
4. The Contractor shall have an adequate supply of HEPA filter elements and spare parts on site for all types of respirators in use.
5. The following minimum respirator protection for use during paint removal or demolition of components and surfaces with lead paint shall be the $\frac{1}{2}$ mask air purifying respirator with high efficiency filters for exposures (not in excess of $500 \mu\text{g}/\text{m}^3$ or $10 \times \text{PEL}$).

C. Protective Clothing:

1. Personal protective clothing shall be provided for all workers, supervisors, and authorized visitors entering the work area.
2. Each worker shall be provided disposable coverall suits each time they enter the work area.
3. Removal workers shall not be limited to two (2) suits, and the Contractor shall supply additional suits as necessary.
4. Under no circumstances shall anyone entering the abatement area be allowed to re-use a contaminated disposable suit.
5. Disposable suits, such as TYVEK suits, and other personal protective equipment (PPE) shall be donned prior to entering the lead work area. A change room shall be provided for workers to put on suits and other personal protective equipment with separate areas to store their street clothes.
6. Eye protection for personnel engaged in lead operations shall be furnished when the use of a full-face respirator is not required.
7. Goggles with side shields shall be worn when working with power tools or a material that may splash or fragment, or if protective eye wear is specified on the Safety Data Sheet (SDS) for a particular product to be used on the project.

1.8 PERSONAL MONITORING

- A. General. The Contractor is required to perform the personal air sampling activities during lead paint disturbing work. The results of such sampling shall be posted, provided to individual workers, and submitted to the Owner as described herein.
- B. Sampling. Samples shall be taken for the duration of the work shift or for eight hours, whichever is less. Personal samples shall be taken every day after the first day. If the Contractor determines that conditions and methods have not changed and does not continue sampling everyday he/she shall provide appropriate Negative Exposure Assessment for the Project record. The Negative Exposure Assessment validity is the Contractor's responsibility. The Consultant and Owner will not approve. Sampling will be used to determine eight-hour time-weighted averages (TWA). The Contractor is responsible for personal sampling as outlined in OSHA Standard 29 CFR 1926.62 and 29 CFR 1910.1025.
- C. Sampling Results. Air sampling results shall be reported to individual workers in written form no more than forty-eight (48) hours after the completion of a sampling cycle. The reporting document shall list each sample's result, sampling time and date, personnel monitored and their social security numbers, flow rate, sample duration, sample yield, cassette size, and analysts' name and company, and shall include an interpretation of the results. Air sample analysis results will be reported in micrograms/cubic meter ($\mu\text{g}/\text{m}^3$).
- D. Testing Laboratory. The Contractor's testing lab shall be participating in the American Industrial Hygiene Association's (AIHA) Environmental Lead Laboratory Accreditation Program (ELLAP). The Contractor shall submit to the Consultant for review and acceptance, the name and address of the laboratory, certification(s) of AIHA participation, a listing of relevant experience in air lead analysis, and presentation of a documented Quality Assurance and Quality Control Program.

PART 2 – PRODUCTS

2.1 GENERAL

- A. Any substitution in materials, equipment, or methods to those specified shall be approved by the Owner prior to use. Any requests for substitution shall be provided in writing to the Owner. The request shall clearly state the rationale for the substitution.
- B. Submit to the Owner product data of all materials and equipment and samples of all materials to be considered as an alternate.
- C. Product data shall consist of manufacturer; catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, Safety Data Sheet (SDS), and other standard descriptive data. Submittal data shall be clearly marked to identify pertinent materials, products or equipment and show performance characteristics and capacities.
- D. Samples shall be of sufficient size and quantity to clearly illustrate the functional characteristics of the product or material with integrally related parts and attachment devices.

2.2 MATERIALS AND PRODUCTS

- A. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name and product technical description.
- B. Damaged or deteriorating materials shall not be used and shall be removed from the premises.
- C. The Contractor shall have available sufficient inventory or dated purchase orders for materials necessary for the job including protective clothing, respirators, filter cartridges, polyethylene sheeting of proper size and thickness, tape, and air filters.
- D. Materials:
 - 1. Polyethylene sheet in a roll size to minimize the frequency of joints shall be delivered to job site with factory label indicating 6 mil.
 - 2. Polyethylene disposable bags shall be six (6) mil. Tie wraps for bags shall be plastic, five (5) inches long (minimum), pointed, and looped to secure filled plastic bags.
 - 3. Tape or adhesive spray will be capable of sealing joints in adjacent polyethylene sheets and for attachment of polyethylene sheet to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including use of amended water.
 - 4. Impermeable containers are to be used to receive and retain any lead containing or contaminated materials until disposal at an acceptable disposal site. (The containers shall be labeled in accordance with EPA and DOT standards.)
 - 5. HEPA filtered exhaust systems shall be used during powered dust generating abatement operations. The use of powered equipment without HEPA exhausts is prohibited.

2.3 TOOLS AND EQUIPMENT

- A. Provide suitable tools for all lead disturbing operations.
- B. The Contractor shall have available power cables or sources such as generators (where required).
- C. Vacuum units, of suitable size and capacities for the project, shall have HEPA filter(s) capable of trapping and retaining 99.97% of all mono-dispersed particles of 0.3 micrometers in diameter.

PART 3 – EXECUTION

3.1 WORKER PROTECTION/TRAINING

- A. The Contractor shall provide appropriate training, respiratory and other personal protection, and biological monitoring for each worker and ensure proper usage during potential lead exposure and the initial exposure assessment.

3.2 CONTRACTOR'S RESPONSIBILITIES

- A. The Contractor is responsible for establishing and maintaining controls referenced herein to prevent dispersal of lead contamination from the lead work area.
- B. The Contractor is also responsible for conducting work with applicable federal, state, and local regulations as referenced herein.

3.3 WORKER HYGIENE PRACTICES

- A. Required during initial exposure assessment and if results of air sampling are above OSHA Action Level.
- B. Work Area Entry. Workers shall don personal protective equipment prior to entering the work area, including respiratory protection, disposable coveralls, gloves, headgear, and footwear.
- C. Work Area Departure. While leaving respirators on, workers shall remove all gross contamination, debris, and dust from disposable coveralls and proceed to change room and remove coveralls and footwear and place in hazardous waste disposal container.
- D. Hand washing Facilities. All workers must wash their hands and faces upon leaving the work area.
- E. Equipment. All equipment used by workers inside the work area shall be wet wiped or bagged for later decontamination before removal from the work area.
- F. Prohibited Activities. Under no circumstances shall workers eat, drink, smoke, chew gum, or tobacco, or remove their respirators in the work area.
- G. Shock Hazards. The Contractor is responsible for using safe procedures to avoid electrical hazards. All temporary electrical wiring will be protected by ground fault circuit interrupters (GFCI).

3.4 LEAD WORK AREA

- A. Required during initial exposure assessment and if results of air sampling are above OSHA Action Level.
- B. The Contractor shall place warning signs at all entrances and exits from the work area. Signage shall be a minimum of 20" x 14" and shall state the following:

**DANGER
LEAD WORK AREA
MAY DAMAGE FERTILITY OR THE UNBORN CHILD
CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM
DO NOT EAT, DRINK OR SMOKE IN THIS AREA**

- C. The Contractor shall designate a change room as specified in this Section. The change room shall consist of two (2) layers of sheeting on the floor surface adjacent to the lead work area. The change room shall have separate storage facilities for street clothes to avoid cross contamination.
- D. The Contractor shall provide potable water for hand and face washing and provide a portable shower unit.
- E. The Contractor shall place six-mil polyethylene drop clothes on floor/ ground surfaces prior to beginning removal work to facilitate clean-up.

3.5 WORK AREA CLEAN UP

- A. The Contractor shall remove all loose chips and debris from all surfaces and place in hazardous waste disposal bags.
- B. The Contractor shall HEPA vacuum all surfaces to remove dust and debris.
- C. Polyethylene drop cloths shall be properly disposed of.

3.6 WASTE DISPOSAL

- A. Metal components with lead containing solder should be recycled. The Contractor shall make sure that they have contacted the recycling facility they are going to retain to receive the material generated on this project to be assured the facility can accept metal with lead solder as part of the scrap metal exemption. If the facility cannot accept it and they still choose to use the facility, the Contractor shall isolate lead solder and dispose of as RCRA lead waste. Any associated water containing items (without solder) will be flushed of water prior to removal and would not be considered hazardous waste for disposal.
- B. Ceramic wall tiles have not been analyzed by TCLP. The Contractor shall assume the ceramic tiles will be disposed of as a RCRA lead waste.
- C. The Contractor's contractual liability shall be the proper disposal of all non-hazardous and hazardous wastes generated at the Site in accordance with all applicable federal, state, and local regulations as referenced herein.
- D. A TCLP sample composite was not collected and analyzed for any of the identified lead containing building materials. EPA RCRA defines toxic concentrations for lead which is commonly identified in paint to be greater than 5.0 milligrams per liter (mg/L), or parts per million (ppm). The Consultant will collect TCLP samples on behalf of the Owner if required for waste disposal. The Contractor shall not collect TCLP samples.

END OF SECTION 028319

Limited Hazardous Building Materials Inspection

October 14-15, 2019
Hebron Elementary School
92 Church Street
Hebron, Connecticut

Silver/Petrucci + Associates

Hamden, Connecticut

October 31, 2019



FUSS & O'NEILL

Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040



FUSS & O'NEILL

November 1, 2019

Mr. Kenneth J. Eldridge, PE
Chief Mechanical Engineer
Silver/Petrucci + Associates
3190 Whitney Avenue, Bldg 2
Hamden, CT 06518

Re: Limited Hazardous Building Materials Inspection
Water Remediation Project
Hebron Elementary School, 92 Church Street, Hebron, Connecticut
Fuss & O'Neill Project No. 20160168.W30

Dear Mr. Eldridge:

Enclosed is the report for the limited hazardous building materials inspection conducted in response to the proposed Water Remediation Project for the Hebron Elementary School located at 92 Church Street in Hebron, Connecticut. The work was conducted for Silver/Petrucci + Associates (the "Client").

The services were performed on October 14-15 and 25, 2019, by Fuss & O'Neill, Inc. licensed inspectors and included a limited asbestos-containing material (ACM) inspection and lead-based paint (LBP) determination. The information summarized in this report is for the above-mentioned materials only. The work was performed in accordance with our written proposal dated August 19, 2019, and revised September 17, 2019.

If you should have any questions regarding the contents of this report, please do not hesitate to contact me at (860) 646-2469, extension 5585. Thank you for this opportunity to have served your environmental needs.

Sincerely,

Kathleen C. Pane
Associate

KCP/jd

Enclosure

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1 Introduction

On October 14-15 and 25, 2019, Fuss & O'Neill, Inc. (Fuss & O'Neill) representatives Ben Silverman and Stacy Vanderveer performed a limited hazardous building materials inspection for proposed renovations at the Hebron Elementary School located at 92 Church Street in Hebron, Connecticut (the "Site"). The work was conducted for Silver/Petrucci + Associates (the "Client") who is working on behalf of the Town of Hebron (the "Owner") in accordance with our written scope of services dated August 19, 2019, and revised September 17, 2019, and is subject to the limitations included in Appendix A.

The inspection included a limited asbestos-containing material (ACM) inspection and lead-based paint (LBP) determination. This limited hazardous building materials inspection was performed in response to proposed renovation activities and included building components that will be disturbed for new installations as part of the Water Remediation Project. The existing copper piping with lead solder is planned to be abandoned and new piping will be installed.

This inspection was limited to non-invasive and discrete sampling techniques. Specific areas that were not inspected include the following:

- Areas and building components that will not be impacted by the work based on the demolition plans provided by the Client dated August 6, 2019;
- Within mechanical equipment;
- Spaces above fixed ceilings, solid walls and between and beneath floors;
- Limited access to pipe tunnels due to confined space entry requirements;
- Wall cavities,
- Spaced behind brick façade (spicket locations may be installed, could not damage brick on building to evaluate);
- Vapor/moisture barrier under floors/slabs or on concrete foundations;
- Subgrade piping or other subgrade features;
- Building exterior; and
- Concealed pipe chases.

We have excluded collection and analysis of building materials for polychlorinated biphenyls (PCBs). Sampling for PCBs is presently not mandated by the Environmental Protection Agency (EPA); however, significant liability risk for disposing of PCB-containing wastes exists. Recent knowledge of PCBs within these matrices has become more prevalent, especially with remediation contractors, waste haulers, and disposal facilities. Many property Owners have become subject to large changes in schedule, scope, and costs as a result of failure to identify this possible contaminant prior to renovation or demolition.

1.1 Building and Mechanical System Description

The building structure includes a single story with a partial basement, and was reportedly constructed in 1947, with additions constructed in 1957, 1963, 1988 and 2000. The building contains approximately 82,384 square feet (SF) of total floor area. According to Site maintenance personnel building

renovations were conducted but the exact scope and time was not researched. The building is heated by a gas-fired forced hot air boiler system. Asbestos abatement of some floor tile and pipe insulation has occurred at the Site according to Site maintenance personnel.

2 Asbestos Inspection

A property Owner must ensure that a thorough ACM inspection is performed prior to possible disturbance of suspect ACM during renovation or demolition activities. This is a requirement of the Environmental Protection Agency (EPA) National Emission Standards for Hazardous Air Pollutants (NESHAP) regulation located at Title 40 CFR, Part 61, Subpart M.

On October 14-15 and 25, 2019, Mr. Ben Silverman and Ms. Stacy Vanderveer of Fuss & O'Neill conducted the limited inspection. Mr. Silverman and Ms. Vanderveer are both State of Connecticut Department of Public Health (CTDPH)-licensed Asbestos Inspectors. Refer to Appendix B for the Asbestos Inspector licenses and accreditations.

2.1 Methodology

The limited inspection was conducted by visually inspecting for suspect ACM and touching each of the suspect materials that will be impacted by the Water Remediation Project. The suspect materials were categorized into three EPA NESHAP groups: friable and non-friable Category I and Category II type ACM.

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

The suspect ACM were also categorized into their applications including Thermal System Insulation (TSI), Surfacing ACM (S), and Miscellaneous ACM (M). TSI includes those materials used to prevent heat loss/gain or water condensation on mechanical systems. Examples of TSI are pipe insulation, boiler insulation, duct insulation, and mudded pipe fitting insulations. Surfacing ACM includes those ACM that are applied by spray, trowel, or otherwise applied to an existing surface. Surfacing ACM is commonly used for fireproofing, decorative, and acoustical applications. Miscellaneous materials include those ACM not listed as thermal or surfacing, such as linoleum, vinyl asbestos flooring, ceiling tiles, caulking, glues, construction adhesives, etc.

The EPA recommends collecting suspect ACM samples in a manner sufficient to determine asbestos content and to segregate each suspect type of homogenous (similar in color, texture, and date of application) materials. The EPA NESHAP regulation does not specifically identify a minimum number of samples to be collected for each homogeneous material, but the NESHAP regulation does

recommend the use of sampling protocols included in Title 40 CFR, Part 763, Subpart E: Asbestos Hazard Emergency Response Act (AHERA).

The EPA AHERA regulation requires a specific number of samples be collected based on the type of material and quantity present. This regulation includes the following protocol:

1. Surfacing Materials (S) (i.e., plasters, spray-applied fireproofings, etc.) must be collected in a randomly distributed manner representing each homogenous area based on the overall quantity represented by the sampling as follows:
 - a. Three (3) samples collected from each homogenous area that is less than or equal to 1,000 square feet.
 - b. Five (5) samples collected from each homogenous area that is greater than 1,000 square feet but less than or equal to 5,000 square feet.
 - c. Seven (7) samples collected from each homogenous area that is greater than 5,000 square feet.
2. Thermal System Insulation (TSI) (i.e., pipe insulations, tank insulations, etc.) must be collected in a randomly distributed manner representing each homogenous area. Three (3) samples must be collected from each material. Also, a minimum of one (1) sample of any patching materials applied to TSI presuming the patched area is less than 6 linear or square feet should be collected.
3. Miscellaneous materials (M) (i.e., floor tile, gaskets, construction mastics, etc.) should have a minimum of two (2) samples collected for each type of homogenous material. Sample collection was conducted in a manner sufficient to determine asbestos content of the homogenous material as determined by the inspector.

The inspectors collected samples of those suspect ACM anticipated to be disturbed by the proposed renovation activities for the Water Remediation Project, and prepared a proper chain of custody form for transmission of the samples to EMSL Analytical, Inc. for analysis. EMSL is a State of Connecticut-licensed and American Industrial Hygiene Association (AIHA)-accredited asbestos laboratory. The sample locations, material type, sample identification, and asbestos content are identified by bulk sample analysis in Table 1 attached hereto. Suspect ACM not listed in Table 1 that may be identified at a later date at the Site, should be assumed to be ACM until sample collection and analysis indicate otherwise. Initial asbestos sample analysis was conducted using the EPA Interim Method for the Determination of Asbestos in Bulk Building Materials (EPA/600/R-93/116) via Polarized Light Microscopy with Dispersion Staining (PLM/DS).

If samples of suspect materials could not be collected or were inaccessible but observed elsewhere, these materials were assumed to contain asbestos and the inspectors approximated quantities. The exterior was not included in the scope of work for this limited inspection, only interior building materials that may be impacted by the renovation were inspected. Also, intrusive or destructive investigative techniques were not performed at the Site to access and observe concealed areas that may have had suspect ACMs that were hidden or obstructed from normal view. Refer to Section 1 of this report regarding additional limitations.

2.2 Results

Utilizing the EPA protocol and criteria, the following materials were determined to contain asbestos:

- White caulk at counter/ceramic wall tile junction (1963 wing – Girls' & Boys' Lavatories).

The following materials were assumed to contain asbestos (associated only with areas that will be impacted by the renovation):

- Air cell pipe insulation observed at concrete floor penetrations (1957 wing). Appears material was not removed as part of the tunnel pipe insulation abatement; and
- Pipe insulation within wet wall in bathrooms associated with the 1947 and 1963 Lavatories.

Refer to Table 1 for a complete list of ACM and non-ACM sampled as part of this limited inspection. Refer to Table 2 attached hereto for the ACM inventory. Refer to Appendix C for the asbestos laboratory reports and chain of custody forms. Refer to Appendix D for Site photographs.

2.3 Discussion

The EPA, the Occupational Safety and Health Administration (OSHA), and the CTDPH, define a material that contains greater than one percent (> 1%) asbestos, utilizing PLM/DS, as being an ACM. Materials that are identified as "none detected" are specified as not containing asbestos.

Suspect ACM not identified during this limited inspection should be presumed to contain asbestos until sample collection and laboratory analysis indicate otherwise.

Additionally, the EPA has suggested that materials that are non-friable organically bound (NOB) materials (e.g., asphaltic-based materials, adhesives, etc.) are recommended for further confirmatory analysis utilizing Transmission Electron Microscopy (TEM). Thirty-five (35) of the collected samples were recommended to be analyzed by TEM. The results of TEM analysis are denoted in Table 1.

2.4 Conclusions and Recommendations

Based on visual observations, sample collection, and laboratory analysis, asbestos is present at the Site.

Prior to disturbance, ACM that would likely be impacted by the proposed renovation activities must first be abated by a state-licensed Asbestos Abatement Contractor. This is a requirement of CTDPH and EPA NESHAP regulations governing asbestos abatement.

Due to the inability to effectively separate some types of multi-layered ACM or completely remove ACM (e.g., caulking from walls/countertops, etc.) from non-ACM, these materials are considered asbestos-contaminated and must be managed as ACM for the purposes of removal and disposal.

Fuss & O'Neill has developed technical specifications as part of renovation plans for the Site under separate cover.

Suspect materials encountered during renovation that are not identified in this report as being non-ACM should be presumed to be ACM until sample collection and laboratory analysis indicate otherwise. Prior to renovation that may disturb hidden/inaccessible areas, we recommend conducting a supplemental asbestos inspection of these areas and spaces. These limitations are discussed in Section 1 of this report.

Fuss & O'Neill recommends that if any ACM are to remain in the building following renovation activities, the ACM should be managed in-place under the existing AHERA Asbestos Management Plan (AMP) for the Site.

This report is not intended to be utilized as a bidding document or as a project specification document.

The report is designed to aid the building owner, architect, construction manager, general contractors, and asbestos abatement contractors in locating identified ACM.

3 Lead-Based Paint Determination

On October 14-15, 2019, Mr. Ben Silverman and Stacy Vanderveer of Fuss & O'Neill performed a lead-based paint (LBP) determination associated with coated building components at the Site that may be disturbed during renovation activities. An X-ray fluorescence (XRF) analyzer was used to perform a LBP determination. The determination was targeted to specific building components that may be impacted by the renovation. The Site is currently the Hebron Elementary School which offers education at the kindergarten to 12th grade levels. There are children under the age of six that utilize the building.

In addition, lead in solder was identified by others associated with plumbing lines in the 1947, 1957 and 1963 building wings. Lead solder is not addressed in this report and Fuss & O'Neill was not provided any reports regarding lead-in solder testing. The Site is considered a child occupied facility under the EPA Renovation, Repair and Painting (RRP) Rule which requires workers to be certified and trained in the use of lead safe work practices when disturbing LBP to control LBP hazards.

3.1 Methodology

A Heuresis Pb200i handheld XRF lead paint analyzer, serial number 2171, was utilized for the LBP determination. The instrument was checked for proper calibration prior to use as detailed by the manufacturer and the Performance Characteristic Sheet (PCB) developed for the instruments.

For the purpose of this LBP determination, targeted building components anticipated to be impacted by the renovation were tested. Individual repainting efforts are not discoverable in such a limited program. LBP issues involving properties that are not residential are regulated to a limited degree for worker protection relating to paint-disturbing work activities and waste disposal.

Worker protection is regulated by OSHA regulations, as well as CTDPH regulations. These regulations involve air monitoring of workers to determine exposure levels when disturbing lead containing paint.

An LBP determination cannot determine a safe level of lead, but is intended to provide guidance for implementing industry standards for lead in paint at identified locations. Contractors may then better determine exposure of workers to airborne lead by understanding the different concentrations of LBP activities that disturb paint on representative surfaces.

The EPA Resource Conservation and Recovery Act (RCRA), as well as the Connecticut Department of Energy and Environmental Protection (CTDEEP), regulate disposal of lead-containing waste. Lead-containing materials that will be impacted during renovation or demolition activities, and result in waste for disposal must either be analyzed using the Toxicity Characteristic Leaching Procedure (TCLP) analysis if lead is determined to be present in non-residential buildings, or be presumed as a hazardous waste. A TCLP sample is a representative sample of the intended waste stream. The results are compared to a threshold value of 5.0 milligrams per liter (mg/L); a result exceeding this value is considered hazardous lead waste. If the result is below the established level, the material is not considered hazardous and may be disposed as general construction debris.

A level of LBP equal to or exceeding 1.0 milligrams of lead per square centimeter (mg/cm²) is considered toxic or dangerous for compliance with residential standards. For purpose of this LBP determination the level of 1.0 mg/cm² has been utilized as a threshold for areas where possible worker exposures may occur.

3.2 XRF Determination Results

The following targeted building components were determined to contain levels of lead (equal to or greater than 1.0 mg/cm²) by XRF:

- Black 4" Ceramic Cove Base Tiles (1947 Wing Lavatories); and
- Pink and Blue 4" Ceramic Wall Tile (1963 Wing Lavatories).

Refer to Appendix E for the XRF lead determination field data sheets.

3.3 Discussion

OSHA published a Lead in Construction Standard (OSHA Lead Standard) Title 29 CFR, Part 1926.62 in May 1993. The OSHA Lead Standard has no set limit for the content of lead in paint below which the standards do not apply. The OSHA Lead Standards are task-based, and derived from airborne exposure and blood lead levels.

The results of this LBP determination are intended to provide guidance to contractors for occupational lead exposure controls. Building components coated with lead levels above industry standards may cause exposures to lead above OSHA standards during proposed demolition and renovation activities. The results of this determination are also intended to provide insight into waste disposal requirements, in accordance with EPA RCRA regulations. Due to the destructive nature, TCLP sampling was not conducted.

XRF testing results identified lead-containing ceramic tiles that will be disturbed by the renovation work for new plumbing installations. This renovation work will occur in a child occupied facility and must be conducted by an EPA RRP certified contractor and RRP trained workers following lead safe work practices.

3.4 Conclusion and Recommendations

Based on our XRF determination results, lead-containing ceramic materials are present in the building that will be impacted by the renovation.

Contractors must be made aware that OSHA has not established a level of lead in a material below which Title 29 CFR, Part 1926.62 does not apply. Contractors shall comply with exposure assessment criteria, interim worker protection, and other requirements of the regulation as necessary to protect workers during any renovation work that will impact lead-containing materials.

If disturbed by renovation activities, lead-containing components should be segregated from the general waste stream for sample collection and analysis by TCLP to determine proper off-site waste disposal.

Note that proposed work involving disturbance of identified lead-containing ceramic tile must be performed in accordance with OSHA worker protection requirements, as well as EPA RRP Rule.

For purposes of complying with the EPA RRP Rule (40 CFR 745.80 through 92) a Comprehensive Lead Inspection of the entire structure or targeted areas scheduled for renovation is necessary to determine if the RRP rule is applicable. A Comprehensive Lead Inspection includes testing representative coated surfaces of each building component in each room or room equivalent for lead content. Other types of lead surveys, such as lead paint determination, screening and risk assessments, do not include testing all coated surfaces for lead and typically do not satisfy the LBP testing requirements of the RRP rule. Since the testing performed was not a comprehensive inspection, the testing will not satisfy applicability requirements of the RRP for any untested surfaces. The testing was performed for surfaces targeted for renovation as described in the renovation plans supplied by the Client. Only the results for those specific surfaces and locations tested within this targeted testing can be utilized to determine applicability requirements for RRP. Reliance on this report for determining RRP applicability for any other surfaces than those tested is not authorized by Fuss & O'Neill.

The building is not regulated by CTDPH regarding lead paint since it is not residential or a licensed day care facility, but as a school building it is considered a "child-occupied facility and is subject to lead safe work practices in accordance with the EPA RRP Rule.

Those surfaces which do not contain LBP or lead are not subject to the RRP requirements. If a specific component or surface is not identified as having been tested it should be presumed to contain lead unless tested. Contractor's should be aware that the threshold limit of 1.0 mg/cm² for purposes of RRP requirements is not recognized by OSHA and workers exposures are still subject to lead in construction regulation 29 CFR 1926.62 regardless of paint testing results.

Report prepared by Environmental Technician Stacy Vanderveer.

Reviewed by:



Kathleen C. Pane
Associate



Robert L. May Jr.
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Tables

Table 1
Summary of Suspect Asbestos-Containing Materials

Sample No.	Sample Location	Material Type	Asbestos Content	Analysis Method
1947 Wing				
101619-BS-01A	Basement – Hot Water Heater Room	Fiberglass pipe wrap	ND	PLM
101619-BS-01B	Basement – Hot Water Heater Room	Fiberglass pipe wrap	ND	PLM
101619-BS-02A	Basement – Hot Water Heater Room	Endcap sealant	ND	PLM/TEM
101619-BS-02B	Basement – Hot Water Heater Room	Endcap sealant	ND	PLM
101619-BS-03A	Basement – Boiler Room 1	Mudded pipe fitting insulation - grey	ND	PLM
101619-BS-03B	Basement – Boiler Room 1	Mudded pipe fitting insulation - grey	ND	PLM
101619-BS-03C	Basement – Boiler Room 1	Mudded pipe fitting insulation - grey	ND	PLM
101619-BS-04A	Basement – Boiler Room 1	Mudded pipe fitting insulation - white	ND	PLM
101619-BS-04B	Basement – Boiler Room 1	Mudded pipe fitting insulation - white	ND	PLM
101619-BS-04C	Basement – Boiler Room 1	Mudded pipe fitting insulation - white	ND	PLM
101619-BS-05A	Kitchen	4" cove base – grey/tan	ND	PLM/TEM
101619-BS-05B	Kitchen	4" cove base – grey/tan	ND	PLM
101619-BS-06A	Kitchen	Tan adhesive associated with 4" cove base – grey/tan	ND	PLM/TEM
101619-BS-06B	Kitchen	Tan adhesive associated with 4" cove base – grey/tan	ND	PLM
101619-BS-07A	Kitchen	12"x12" Floor Tile – tan mottled	ND	PLM/TEM
101619-BS-07B	Kitchen	12"x12" Floor Tile – tan mottled	ND	PLM
101619-BS-08A	Kitchen	Yellow adhesive associated with 12"x12" Floor Tile – tan mottled	ND	PLM/Insufficient Material for TEM
102519-SV-08A1	1947 Kitchen	yellow adhesive associated with 12"x12" floor tile - tan mottled	ND	TEM
101619-BS-08B	Kitchen	Yellow adhesive associated with 12"x12" Floor Tile – tan mottled	ND	PLM
101619-BS-09A	Kitchen	CMU block	ND	PLM
101619-BS-09B	Kitchen	CMU block	ND	PLM
101619-BS-10A	Kitchen	CMU mortar	ND	PLM

Sample No.	Sample Location	Material Type	Asbestos Content	Analysis Method
101619-BS-10B	Kitchen	CMU mortar	ND	PLM
101619-BS-11A	Meeting Room adjacent Conference Room	4" cove base – light grey	ND	PLM/TEM
101619-BS-11B	Meeting Room adjacent Conference Room	4" cove base – light grey	ND	PLM
101619-BS-12A	Meeting Room adjacent Conference Room	Yellow adhesive associated with 4" cove base – light grey	ND	PLM/TEM
101619-BS-12B	Meeting Room adjacent Conference Room	Yellow adhesive associated with 4" cove base – light grey	ND	PLM
101619-BS-13A	Pipe Closet between Boys' & Girls' Lavatories	Brick	ND	PLM
101619-BS-13B	Pipe Closet between Boys' & Girls' Lavatories	Brick	ND	PLM
101619-BS-14A	Pipe Closet between Boys' & Girls' Lavatories	Brick mortar	ND	PLM
101619-BS-14B	Pipe Closet between Boys' & Girls' Lavatories	Brick mortar	ND	PLM
101619-BS-15A	Pipe Closet between Boys' & Girls' Lavatories	Insulation debris	ND	PLM
101619-BS-15B	Pipe Closet between Boys' & Girls' Lavatories	Insulation debris	ND	PLM
101619-BS-15C	Pipe Closet between Boys' & Girls' Lavatories	Insulation debris	ND	PLM
101619-BS-16A	Boys' Lavatory	White sink caulk	ND	PLM/TEM
101619-BS-16B	Girls' Lavatory	White sink caulk	ND	PLM
101619-BS-17A	Boys' Lavatory	Dark grey pebbled laminate countertop	ND	PLM
101619-BS-17B	Boys' Lavatory	Dark grey pebbled laminate countertop	ND	PLM
101619-BS-18A	Boys' Lavatory	Adhesive associated with Dark grey pebbled laminate countertop	ND	PLM/TEM
101619-BS-18B	Boys' Lavatory	Adhesive associated with Dark grey pebbled laminate countertop	ND	PLM
101619-BS-19A	Boys' Lavatory	4" blue ceramic wall tile	ND	PLM
101619-BS-19B	Boys' Lavatory	4" blue ceramic wall tile	ND	PLM
101619-BS-20A	Boys' Lavatory	Grout associated with 4" blue ceramic wall tile	ND	PLM
101619-BS-20B	Boys' Lavatory	Grout associated with 4" blue ceramic wall tile	ND	PLM
101619-BS-21A	Boys' Lavatory	Adhesive associated with 4" blue ceramic wall tile	ND	PLM/TEM

Sample No.	Sample Location	Material Type	Asbestos Content	Analysis Method
101619-BS-21B	Boys' Lavatory	Adhesive associated with 4" blue ceramic wall tile	ND	PLM
101619-BS-22A	Boys' Lavatory (also in Girls' Lavatory)	4" black ceramic wall base	ND	PLM
101619-BS-22B	Boys' Lavatory (also in Girls' Lavatory)	4" black ceramic wall base	ND	PLM
101619-BS-23A	Boys' Lavatory (also in Girls' Lavatory)	Setting material for 4" black ceramic wall base	ND	PLM
101619-BS-23B	Boys' Lavatory (also in Girls' Lavatory)	Setting material for 4" black ceramic wall base	ND	PLM
101619-BS-24A	Boys' Lavatory (also in Girls' Lavatory)	Brown mosaic ceramic floor tile	ND	PLM
101619-BS-24B	Boys' Lavatory (also in Girls' Lavatory)	Brown mosaic ceramic floor tile	ND	PLM
101619-BS-25A	Boys' Lavatory (also in Girls' Lavatory)	Grout for Brown mosaic ceramic floor tile	ND	PLM
101619-BS-25B	Boys' Lavatory (also in Girls' Lavatory)	Grout for Brown mosaic ceramic floor tile	ND	PLM
101619-BS-26A	Boys' Lavatory (also in Girls' Lavatory)	Setting material for Brown mosaic ceramic floor tile	ND	PLM
101619-BS-26B	Boys' Lavatory (also in Girls' Lavatory)	Setting material for Brown mosaic ceramic floor tile	ND	PLM
101619-BS-27A	Staff Lavatory	2" White Ceramic Wall Tile	ND	PLM
101619-BS-27B	Staff Lavatory	2" White Ceramic Wall Tile	ND	PLM
101619-BS-28A	Staff Lavatory	Grout for 2" White Ceramic Wall Tile	ND	PLM
101619-BS-28B	Staff Lavatory	Grout for 2" White Ceramic Wall Tile	ND	PLM
101619-BS-29A	Staff Lavatory	Setting Material for 2" White Ceramic Wall Tile	ND	PLM/TEM
101619-BS-29B	Staff Lavatory	Setting Material for 2" White Ceramic Wall Tile	ND	PLM
101619-BS-30A	Room 3	White Gypsum Board Wall	ND	PLM
101619-BS-30B	Room 3	White Gypsum Board Wall	ND	PLM
101619-BS-31A	Room 3	White Wall Joint Compound	ND	PLM
101619-BS-31B	Room 3	White Wall Joint Compound	ND	PLM
101619-BS-32A	Storage adjacent Main Office	Gray Gypsum Board Ceiling	ND	PLM
101619-BS-32B	Storage adjacent Main Office	Gray Gypsum Board Ceiling	ND	PLM
101619-BS-33A	Storage adjacent Main Office	White Joint Compound for Gypsum Board Ceiling	ND	PLM

Sample No.	Sample Location	Material Type	Asbestos Content	Analysis Method
101619-BS-33B	Storage adjacent Main Office	White Joint Compound for Gypsum Board Ceiling	ND	PLM
101619-BS-34A	Storage adjacent Main Office	Off-White Gypsum Board Ceiling	ND	PLM
101619-BS-34B	Storage adjacent Main Office	Off-White Gypsum Board Ceiling	ND	PLM
101619-BS-35A	Custodial Closet opposite Main Office	White Gypsum Board Ceiling	ND	PLM
101619-BS-35B	Custodial Closet opposite Main Office	White Gypsum Board Ceiling	ND	PLM
101619-BS-36A	Custodial Closet opposite Main Office	Textured Ceiling Paint and Joint Compound	ND	PLM
101619-BS-36B	Custodial Closet opposite Main Office	Textured Ceiling Paint and Joint Compound	ND	PLM
101619-BS-37A	Custodial Closet opposite Main Office	Textured Ceiling Paint	ND	PLM/TEM
101619-BS-37B	Custodial Closet opposite Main Office	Textured Ceiling Paint	ND	PLM
101619-BS-37C	Custodial Closet opposite Main Office	Textured Ceiling Paint	ND	PLM
1957 Wing				
101619-BS-38A	Room 6	Gray Mottled 12" x 12" Floor Tile	ND	PLM/TEM
101619-BS-38B	Room 7	Gray Mottled 12" x 12" Floor Tile	ND	PLM
101619-BS-39A	Room 6	Yellow Adhesive/Black Mastic for Gray Mottled 12" x 12" Floor Tile	ND	PLM/TEM
101619-BS-39B	Room 7	Yellow Adhesive/Black Mastic for Gray Mottled 12" x 12" Floor Tile	ND	PLM
101619-BS-40A	Room 6	Gray 4" Cove Base	ND	PLM/TEM
101619-BS-40B	Room 7	Gray 4" Cove Base	ND	PLM
101619-BS-41A	Room 6	Adhesive for Gray 4" Cove Base	ND	PLM/TEM
101619-BS-41B	Room 7	Adhesive for Gray 4" Cove Base	ND	PLM
101619-BS-42A	Hallway by Water Fountain	Red 4" Cove Base	ND	PLM/TEM
101619-BS-42B	Hallway by Water Fountain	Red 4" Cove Base	ND	PLM
101619-BS-43A	Hallway by Water Fountain	Adhesive for Red 4" Cove Base	ND	PLM/TEM
101619-BS-43B	Hallway by Water Fountain	Adhesive for Red 4" Cove Base	ND	PLM
101619-BS-44A	Hallway by Water Fountain	Plaster Wall Skim Coat	ND	PLM
101619-BS-44B	Hallway by Water Fountain	Plaster Wall Skim Coat	ND	PLM

Sample No.	Sample Location	Material Type	Asbestos Content	Analysis Method
101619-BS-44C	Hallway by Water Fountain	Plaster Wall Skim Coat	ND	PLM
101619-BS-45A	Hallway by Water Fountain	Plaster Wall Base Coat	ND	PLM
101619-BS-45B	Hallway by Water Fountain	Plaster Wall Base Coat	ND	PLM
101619-BS-45C	Hallway by Water Fountain	Plaster Wall Base Coat	ND	PLM
101619-BS-46A	Hallway by Water Fountain	Gray Gypsum Board Wall	ND	PLM
101619-BS-46B	Hallway by Water Fountain	Gray Gypsum Board Wall	ND	PLM
101619-BS-47A	Hallway by Water Fountain	White Joint Compound for Gray Gypsum Board Wall	ND	PLM
101619-BS-47B	Hallway by Water Fountain	White Joint Compound for Gray Gypsum Board Wall	ND	PLM
101619-BS-48A	Hallway by Water Fountain	Gray Gypsum Board Ceiling	ND	PLM
101619-BS-48B	Hallway by Water Fountain	Gray Gypsum Board Ceiling	ND	PLM
101619-BS-49A	Hallway by Water Fountain	White Joint Compound for Gray Gypsum Board Ceiling	ND	PLM
101619-BS-49B	Hallway by Water Fountain	White Joint Compound for Gray Gypsum Board Ceiling	ND	PLM
1963 Wing				
101619-BS-50A	Hallway above Ceiling	Older Fiberglass Pipe Wrap w/Black Coating	ND	PLM
101619-BS-50B	Hallway above Ceiling	Older Fiberglass Pipe Wrap w/Black Coating	ND	PLM
101619-BS-51A	Storage Room	CMU Block	ND	PLM
101619-BS-51B	Server/Storage Room	CMU Block	ND	PLM
101619-BS-52A	Storage Room	Mortar for CMU Block	ND	PLM
101619-BS-52B	Server/Storage Room	Mortar for CMU Block	ND	PLM
101619-BS-53A	Room 12	Interior of Partition Wall	ND	PLM
101619-BS-53B	Room 12	Interior of Partition Wall	ND	PLM
101619-BS-54A	Room 12	Gypsum Board Exterior of Partition Wall	ND	PLM
101619-BS-54B	Room 12	Gypsum Board Exterior of Partition Wall	ND	PLM
101619-BS-55A	1957/1963 Transition Hallway	Gypsum Board Fire Wall	ND	PLM
101619-BS-55B	1957/1963 Transition Hallway	Gypsum Board Fire Wall	ND	PLM
101619-BS-56A	1957/1963 Transition Hallway	White Joint Compound for Gypsum Board Fire Wall	ND	PLM
101619-BS-56B	1957/1963 Transition Hallway	White Joint Compound for Gypsum Board Fire Wall	ND	PLM

Sample No.	Sample Location	Material Type	Asbestos Content	Analysis Method
101619-BS-57A	Girl's Lavatory between Rooms 16 and 14	Pink Mosaic Ceramic Floor Tile	ND	PLM
101619-BS-57B	Girl's Lavatory between Rooms 12 and 10	Pink Mosaic Ceramic Floor Tile	ND	PLM
101619-BS-58A	Girl's Lavatory between Rooms 16 and 14	Grout for Pink Mosaic Ceramic Floor Tile	ND	PLM
101619-BS-58B	Girl's Lavatory between Rooms 12 and 10	Grout for Pink Mosaic Ceramic Floor Tile	ND	PLM
101619-BS-59A	Girl's Lavatory between Rooms 16 and 14	Setting Material for Pink Mosaic Ceramic Floor Tile	ND	PLM
101619-BS-59B	Girl's Lavatory between Rooms 12 and 10	Setting Material for Pink Mosaic Ceramic Floor Tile	ND	PLM
101619-BS-60A	Boy's Lavatory between Rooms 16 and 14	Blue Mosaic Ceramic Floor Tile	ND	PLM
101619-BS-60B	Boy's Lavatory between Rooms 12 and 10	Blue Mosaic Ceramic Floor Tile	ND	PLM
101619-BS-61A	Boy's Lavatory between Rooms 16 and 14	Grout for Blue Mosaic Ceramic Floor Tile	ND	PLM
101619-BS-61B	Boy's Lavatory between Rooms 12 and 10	Grout for Blue Mosaic Ceramic Floor Tile	ND	PLM
101619-BS-62A	Boy's Lavatory between Rooms 16 and 14	Setting Material for Blue Mosaic Ceramic Floor Tile	ND	PLM
101619-BS-62B	Boy's Lavatory between Rooms 12 and 10	Setting Material for Blue Mosaic Ceramic Floor Tile	ND	PLM
101619-BS-63A	Girl's Lavatory between Rooms 16 and 14	Pink 4" Ceramic Wall Tile	ND	PLM
101619-BS-63B	Girl's Lavatory between Rooms 12 and 10	Pink 4" Ceramic Wall Tile	ND	PLM
101619-BS-64A	Girl's Lavatory between Rooms 16 and 14	Grout for Pink 4" Ceramic Wall Tile	ND	PLM
101619-BS-64B	Girl's Lavatory between Rooms 12 and 10	Grout for Pink 4" Ceramic Wall Tile	ND	PLM
101619-BS-65A	Girl's Lavatory between Rooms 16 and 14	Adhesive for Pink 4" Ceramic Wall Tile	Insufficient Material	PLM
102519-SV-65A1	1963- Girls Lavatory between rooms 12 & 10	Adhesive for Pink 4" Ceramic Wall Tile	ND	PLM
101619-BS-65B	Girl's Lavatory between Rooms 12 and 10	Adhesive for Pink 4" Ceramic Wall Tile	Insufficient Material	PLM
102519-SV-65B1	1963- Girls Lavatory between rooms 16 & 14	Adhesive for Pink 4" Ceramic Wall Tile	ND	PLM
101619-BS-66A	Boy's Lavatory between Rooms 16 and 14	Blue 4" Ceramic Wall Tile	ND	PLM

Sample No.	Sample Location	Material Type	Asbestos Content	Analysis Method
101619-BS-66B	Boy's Lavatory between Rooms 12 and 10	Blue 4" Ceramic Wall Tile	ND	PLM
101619-BS-67A	Boy's Lavatory between Rooms 16 and 14	Grout for Blue 4" Ceramic Wall Tile	ND	PLM
101619-BS-67B	Boy's Lavatory between Rooms 12 and 10	Grout for Blue 4" Ceramic Wall Tile	ND	PLM
101619-BS-68A	Boy's Lavatory between Rooms 16 and 14	Setting material for Blue 4" Ceramic Wall Tile	Insufficient Material	PLM
102519-SV-68A1	Boy's Lavatory between Rooms 16 and 14	Setting material for Blue 4" Ceramic Wall Tile	ND	PLM
101619-BS-68B	Boy's Lavatory between Rooms 16 and 14	Setting material for Blue 4" Ceramic Wall Tile	Insufficient Material	PLM
102519-SV-68B1	Boy's Lavatory between Rooms 16 and 14	Setting material for Blue 4" Ceramic Wall Tile	ND	PLM
101619-BS-69A	1957/1963 Transition Hallway	Red Fire Stop Caulk	ND	PLM/TEM
101619-BS-69B	1957/1963 Transition Hallway	Red Fire Stop Caulk	ND	PLM
101619-BS-70A	Room 10	White Caulk at Counter/CMU Junction	ND	PLM/TEM
101619-BS-70B	Room 10	White Caulk at Counter/CMU Junction	ND	PLM
101619-BS-71A	Girl's Lavatory	White Caulk at Counter/Ceramic Wall Tile Junction	5% Anthophyllite	PLM
101619-BS-71B	Boy's Lavatory	White Caulk at Counter/Ceramic Wall Tile Junction	NA/Pos Stop	
101619-BS-72A	Room 14	Tan Pebble Laminate Countertop/Adhesive (Backsplash)	ND	PLM/TEM
101619-BS-72B	Room 14	Tan Pebble Laminate Countertop/Adhesive (Countertop)	ND	PLM
101619-BS-73A	Girl's Lavatory	Off-White Countertop/Adhesive	ND	PLM/insufficient Material for TEM
102519-SV-73A1	1963 - Girls Lavatory	Off-White Countertop/Adhesive	ND	TEM
101619-BS-73B	Boy's Lavatory	Off-White Countertop/Adhesive	ND	PLM
101619-BS-74A	Nurse's Office	Coral Countertop/Adhesive	ND	PLM/insufficient Material for TEM
102519-SV-74A1	1963 - Nurse's Office	Coral Countertop/Adhesive	ND	TEM

Sample No.	Sample Location	Material Type	Asbestos Content	Analysis Method
101619-BS-74B	Nurse's Office	Coral Countertop/Adhesive	ND	PLM
101619-BS-75A	Room 10	Gray Sink Undercoat	ND	PLM/TEM
101619-BS-75B	Room 16	Gray Sink Undercoat	ND	PLM
101619-BS-76A	Nurse's Office	Pink Sink Undercoat	ND	PLM/TEM
101619-BS-76B	Nurse's Office	Pink Sink Undercoat	ND	PLM
1988 Wing				
101619-BS-77A	Art Room	CMU Block	ND	PLM
101619-BS-77B	Copy Room	CMU Block	ND	PLM
101619-BS-78A	Art Room	Mortar for CMU Block	ND	PLM
101619-BS-78B	Copy Room	Mortar for CMU Block	ND	PLM
101619-BS-79A	Staff Lavatory	White Gypsum Board Ceiling	ND	PLM
101619-BS-79B	Staff Lavatory	White Gypsum Board Ceiling	ND	PLM
101619-BS-80A	Staff Lavatory	Joint Compound/Textured Ceiling Paint for White Gypsum Board Ceiling	ND	PLM
101619-BS-80B	Staff Lavatory	Joint Compound/Textured Ceiling Paint for White Gypsum Board Ceiling	ND	PLM
101619-BS-81A	Staff Lavatory	White Gypsum Board Ceiling/Joint Compound/Textured Ceiling Paint Composite	Not Analyzed	
101619-BS-82A	Girl's Lavatory	Tan 4" Ceramic Wall Tile	ND	PLM
101619-BS-82B	Staff Lavatory	Tan 4" Ceramic Wall Tile	ND	PLM
101619-BS-83A	Girl's Lavatory	Grout for Tan 4" Ceramic Wall Tile	ND	PLM
101619-BS-83B	Staff Lavatory	Grout for Tan 4" Ceramic Wall Tile	ND	PLM
101619-BS-84A	Girl's Lavatory	Adhesive for Tan 4" Ceramic Wall Tile	ND	PLM/TEM
101619-BS-84B	Staff Lavatory	Adhesive for Tan 4" Ceramic Wall Tile	ND	PLM
101619-BS-85A	Art Room	Tan 4" Cove Base	ND	PLM
101619-BS-85B	Art Room	Tan 4" Cove Base	ND	PLM/TEM
101619-BS-86A	Art Room	Adhesive for Tan 4" Cove Base	ND	PLM
101619-BS-86B	Art Room	Adhesive for Tan 4" Cove Base	ND	PLM
101619-BS-87A	Media Work Room	Red Countertop/Adhesive	ND	PLM/TEM
101619-BS-87B	Media Work Room	Red Countertop/Adhesive	ND	PLM
101619-BS-88A	Art Room	Black Backsplash Glue	ND	PLM/insufficient Material for TEM

Sample No.	Sample Location	Material Type	Asbestos Content	Analysis Method
102519-SV-88A1	1988 - Art Room	Black Backsplash Glue	ND	TEM
101619-BS-88B	Art Room	Black Backsplash Glue	ND	PLM
101619-BS-89A	Media Work Room	White Sink Undercoat	ND	PLM/TEM
101619-BS-89B	Media Work Room	White Sink Undercoat	ND	PLM
101619-BS-90A	Staff Lavatory (above ceiling)	Pink Fire Stop Caulk	ND	PLM/TEM
101619-BS-90B	Staff Lavatory (above ceiling)	Pink Fire Stop Caulk	ND	PLM
2000 Wing				
101619-BS-91A	Custodial Storage	CMU Block	ND	PLM
101619-BS-91B	Custodial Storage	CMU Block	ND	PLM
101619-BS-92A	Custodial Storage	Mortar for CMU Block	ND	PLM
101619-BS-92B	Custodial Storage	Mortar for CMU Block	ND	PLM
101619-BS-93A	Custodial Storage	White Gypsum Board Ceiling	ND	PLM
101619-BS-93B	Custodial Storage	White Gypsum Board Ceiling	ND	PLM
101619-BS-94A	Custodial Storage	White Joint Compound for White Gypsum Board Ceiling	ND	PLM
101619-BS-94B	Custodial Storage	White Joint Compound for White Gypsum Board Ceiling	ND	PLM
101619-BS-95A	Girl's Lavatory by Gym	White 2" Ceramic Wall Tile	ND	PLM
101619-BS-95B	Custodial Storage	White 2" Ceramic Wall Tile	ND	PLM
101619-BS-96A	Girl's Lavatory by Gym	Grout for White 2" Ceramic Wall Tile	ND	PLM
101619-BS-96B	Custodial Storage	Grout for White 2" Ceramic Wall Tile	ND	PLM
101619-BS-97A	Girl's Lavatory by Gym	Adhesive for White 2" Ceramic Wall Tile	ND	PLM/TEM
101619-BS-97B	Custodial Storage	Adhesive for White 2" Ceramic Wall Tile	ND	PLM
101619-BS-98A	Girl's Lavatory by Gym	White 2" Ceramic Floor Tile	ND	PLM
101619-BS-98B	Girl's Lavatory by Gym	White 2" Ceramic Floor Tile	ND	PLM
101619-BS-99A	Girl's Lavatory by Gym	Grout for White 2" Ceramic Floor Tile	ND	PLM
101619-BS-99B	Girl's Lavatory by Gym	Grout for White 2" Ceramic Floor Tile	ND	PLM
101619-BS-100A	Girl's Lavatory by Gym	Adhesive for White 2" Ceramic Floor Tile	ND	PLM/TEM
101619-BS-100B	Girl's Lavatory by Gym	Adhesive for White 2" Ceramic Floor Tile	ND	PLM
101619-BS-101A	Band Room 26	Tan Pebble Laminate Countertop/Red Adhesive/Caulk	ND	PLM/insufficient Material for TEM

Sample No.	Sample Location	Material Type	Asbestos Content	Analysis Method
102519-SV-101A1	2000 - Band Room 26	Tan Pebble Laminate Countertop/Red Adhesive/Caulk	ND	TEM
101619-BS-101B	Band Room 26	Tan Pebble Laminate Countertop/Red Adhesive/Caulk	ND	PLM
Ceiling Tiles				
101619-BS-102A	1957 Wing Corridor	2' x 2' Light Textured Suspended Ceiling Tile	ND	PLM
101619-BS-102B	1988 Wing Corridor	2' x 2' Light Textured Suspended Ceiling Tile	ND	PLM
101619-BS-102C	2000 Wing Corridor	2' x 2' Light Textured Suspended Ceiling Tile	ND	PLM
101619-BS-103A	1947 Wing Girl's Lavatory	2' x 4' Pinholes and Fissures Suspended Ceiling Tile (2' x 2' Look)	ND	PLM
101619-BS-103B	1947 Wing Boy's Lavatory	2' x 4' Pinholes and Fissures Suspended Ceiling Tile (2' x 2' Look)	ND	PLM
101619-BS-103C	1963 Wing Nurse's Office	2' x 4' Pinholes and Fissures Suspended Ceiling Tile (2' x 2' Look)	ND	PLM
101619-BS-104A	1963 Wing Storage Room	2' x 4' with Holes Suspended Ceiling Tile	ND	PLM
101619-BS-104B	1963 Wing Server/Storage Room	2' x 4' with Holes Suspended Ceiling Tile	ND	PLM
101619-BS-105A	1988 Wing Boy's Bathroom	2' x 4' Textured with Holes Suspended Ceiling Tile	ND	PLM
101619-BS-105B	1988 Wing Boy's Bathroom	2' x 4' Textured with Holes Suspended Ceiling Tile	ND	PLM

NA/Pos Stop = Not Analyzed/ Positive Stop

ND = None Detected

Table 2
Summary of Asbestos-Containing Materials Inventory

Location	Material Type	Asbestos Content	Estimated Total Quantity	Comments
1963 Wing - Girls' & Boys' Lavatories	White Caulk at Counter/Ceramic Wall Tile Junction	5% Anthophyllite	40 Linear	

Location	Material Type	Asbestos Content	Estimated Total Quantity	Comments
1957 Wing - Concrete Floor Pipe Penetrations	Air Cell Pipe Insulation	Assumed	8 LF	Quantity represents only what confirmed at accessible penetrations at Classrooms 5, 6, 7 and 8
1947 and 1963 Lavatories	Pipe insulation	Assumed	125 LF	Quantity and location represents only what may be impacted by renovation work

LF = Linear Feet

Appendix A

Limitations

APPENDIX A

Site:

92 Church Street

Hebron, Connecticut

1. This limited inspection report has been prepared for the exclusive use of Silver/Petrucci + Associates (the "Client") and is subject to, and is issued in connection with the terms and conditions of the original Agreement and all of its provisions. Any use or reliance upon information provided in this report, without the specific written authorization of the Client and Fuss & O'Neill, Inc. (Fuss & O'Neill) shall be at the User's individual risk. This report should not be used as an abatement specification. All quantities of materials identified during this limited inspection are approximate.
2. Fuss & O'Neill has obtained and relied upon information from multiple sources to form certain conclusions regarding likely environmental issues at and in the vicinity of the Site in conducting this limited inspection. Except as otherwise noted, no attempt has been made to verify the accuracy or completeness of such information or verify compliance by any party with federal, state or local laws or regulations.
3. Fuss & O'Neill has obtained and relied upon laboratory analytical results in conducting the limited inspection. This information was used to form conclusions regarding the types and quantities of ACM and lead-containing materials that must be managed prior to renovation activities that may disturb these materials at the Site. Fuss & O'Neill has not performed an independent review of the reliability of this laboratory data.
4. Unless otherwise noted, only suspect hazardous materials associated within or located on the building (aboveground) that may be impacted by the renovation were included in this limited inspection. Suspect hazardous materials may exist below the ground surface that were not included in the scope of work of this limited inspection. Fuss & O'Neill cannot guarantee all asbestos or suspect hazardous materials were identified within the areas included in the scope of work. Only visible and accessible areas were included in the scope of work for this limited inspection.
5. The findings, observations and conclusions presented in this report are limited by the scope of services outlined in our original Agreement (August 19, 2019, revised September 17, 2019), which reflects schedule and budgetary constraints imposed by Client. Furthermore, the assessment has been conducted in accordance with generally accepted environmental practices. No other warranty, expressed or implied, is made.
6. The conclusions presented in this report are based solely upon information gathered by Fuss & O'Neill to date. Should further environmental or other relevant information be discovered at a later date, the Client should immediately bring the information to the Fuss & O'Neill's attention. Based upon an evaluation and assessment of relevant information, Fuss & O'Neill may modify the letter report and its conclusions.

Appendix B

Fuss & O'Neill Inspector Licenses and Accreditations

Dear BENJAMIN L SILVERMAN,

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

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

(860) 509-7603
oplc.dph@ct.gov
www.ct.gov/dph/license

Sincerely,



RENÉE D. COLEMAN-MITCHELL, MPH, COMMISSIONER
DEPARTMENT OF PUBLIC HEALTH


EMPLOYER'S COPY


STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

NAME
BENJAMIN L SILVERMAN

VALIDATION NO. 03-768866	CERTIFICATE NO. 000349	CURRENT THROUGH 08/31/20
------------------------------------	----------------------------------	------------------------------------

PROFESSION
ASBESTOS CONSULTANT-INSP/MGMT PLANNER

SIGNATURE  _____

COMMISSIONER  _____

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

PURSUANT TO THE PROVISIONS OF THE GENERAL STATUTES OF CONNECTICUT

THE INDIVIDUAL NAMED BELOW IS CERTIFIED
BY THIS DEPARTMENT AS A

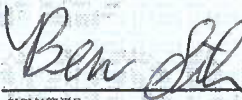
ASBESTOS CONSULTANT-INSP/MGMT PLANNER

BENJAMIN L SILVERMAN

CERTIFICATE NO.
000349

CURRENT THROUGH
08/31/20

VALIDATION NO.
03-768866

SIGNATURE  _____

COMMISSIONER  _____

INSTRUCTIONS:

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

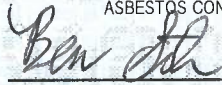
WALLET CARD

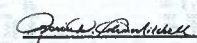
STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

NAME
BENJAMIN L SILVERMAN

VALIDATION NO. 03-768866	CERTIFICATE NO. 000349	CURRENT THROUGH 08/31/20
------------------------------------	----------------------------------	------------------------------------

PROFESSION
ASBESTOS CONSULTANT-INSP/MGMT PLANNER

SIGNATURE  _____

COMMISSIONER  _____

1000997-0001002-0000001 of 0000001-C01-at1d00101-1264-00999

Certificate of Training

This program was presented at
Fuss & O'Neill Incorporated in
Manchester, CT with the prior
approval of the CT DPH.

Awarded to

BEN SILVERMAN

*For successful completion of a 4 Hour, 1/2 Day
Asbestos Building Inspector
Annual Refresher Training
JANUARY 8, 2019*

This training was approved and given in accordance with the
Regulations for Connecticut State Agencies
RCSA 20 - 440 - 1-9 and RCSA 20 - 441 and meets the
requirements of the EPA Revised MAP under TSCA Title II of 4/4/94.

Presented by

Mystic Air Quality Consultants, Inc.

1204 North Road, Groton, CT 06340 (800) 247-7746

Certificate Number: ABIRF27243

Exam Grade: 100

Expiration Date: 01/08/2020



Christopher J. Eident, CIH, CSP, RS



George Williamson, Training Director

Richard Haffey, Training Director

1000492 01 AB 0.409 **AUTO T1 0 0864 06040-599246 -C01-P00494-I



STACY VANDERVEER
FUSS AND O'NEILL ENVIROSCIENCE
146 HARTFORD RD
MANCHESTER CT 06040-5992



Dear STACY VANDERVEER,

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

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

(860) 509-7603
oplc.dph@ct.gov
www.ct.gov/dph/license

Sincerely,

RAUL PINO, MD, MPH, COMMISSIONER
DEPARTMENT OF PUBLIC HEALTH

EMPLOYER'S COPY
STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

NAME
STACY VANDERVEER

VALIDATION NO. 03-743813 CERTIFICATE NO. 000866 CURRENT THROUGH 04/30/20

PROFESSION
ASBESTOS CONSULTANT-INSPECTOR

SIGNATURE COMMISSIONER

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

PURSUANT TO THE PROVISIONS OF THE GENERAL STATUTES OF CONNECTICUT

THE INDIVIDUAL NAMED BELOW IS CERTIFIED
BY THIS DEPARTMENT AS A
ASBESTOS CONSULTANT-INSPECTOR

STACY VANDERVEER

CERTIFICATE NO. 000866
CURRENT THROUGH 04/30/20
VALIDATION NO. 03-743813

SIGNATURE COMMISSIONER

INSTRUCTIONS:

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

WALLET CARD
STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

NAME
STACY VANDERVEER

VALIDATION NO. 03-743813 CERTIFICATE NO. 000866 CURRENT THROUGH 04/30/20

PROFESSION
ASBESTOS CONSULTANT-INSPECTOR

SIGNATURE COMMISSIONER

1000492-0000496-00000001 of 00000001-C01-a1d00101-0864-00494

Certificate of Training

Awarded to

STACY VANDERVEER

*For successful completion of a 4 Hour, 1/2 Day
Asbestos Building Inspector
Annual Refresher Training
SEPTEMBER 4, 2019*

This training was approved and given in accordance with the
Regulations for Connecticut State Agencies
RCSA 20 - 440 - 1-9 and RCSA 20 - 441 and meets the
requirements of the EPA Revised MAP under TSCA Title II of 4/4/94.

Presented by

Mystic Air Quality Consultants, Inc.

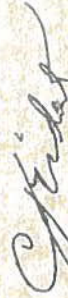
1204 North Road, Groton, CT 06340 (800) 247-7746

Certificate Number: ABIRF27780

Exam Grade: 100

Exam Date: 09/04/2019

Expiration Date: 09/04/2020



Christopher J. Eident, CIH, CSP, RS



George Williamson, Training Director

Richard Haffey, Training Director

Appendix C

Asbestos Laboratory Reports and Chain of Custody Forms



FUSS & O'NEILL

Fuss & O'Neill EMSL Customer No. ENV154

www.fando.com

146 Hartford Road, Manchester, CT 06040

061923605

Phone (860) 646-2469

ASBESTOS BULK SAMPLE CHAIN OF CUSTODY FORM

Project Name: Hebron Elementary School Project No. 20160168.W30 Date: 10/16/2019
 Site Address: 92 Church St, Hebron CT Location: Throughout Project Manager: Kathleen Pane

Sample ID	Sample Location	Type of Material
1947 Wing		
101619-BS-01A	Basement – Hot Water Heater Room	Fiberglass pipe wrap
101619-BS-01B	Basement – Hot Water Heater Room	Fiberglass pipe wrap
101619-BS-02A	Basement – Hot Water Heater Room	Endcap sealant
101619-BS-02B	Basement – Hot Water Heater Room	Endcap sealant
101619-BS-03A	Basement – Boiler Room 1	Mudded pipe fitting insulation - grey
101619-BS-03B	Basement – Boiler Room 1	Mudded pipe fitting insulation - grey
101619-BS-03C	Basement – Boiler Room 1	Mudded pipe fitting insulation - grey
101619-BS-04A	Basement – Boiler Room 1	Mudded pipe fitting insulation - white
101619-BS-04B	Basement – Boiler Room 1	Mudded pipe fitting insulation - white
101619-BS-04C	Basement – Boiler Room 1	Mudded pipe fitting insulation - white
101619-BS-05A	Kitchen	4" cove base – grey/tan
101619-BS-05B	Kitchen	4" cove base – grey/tan
101619-BS-06A	Kitchen	Tan adhesive associated with 4" cove base – grey/tan
101619-BS-06B	Kitchen	Tan adhesive associated with 4" cove base – grey/tan
101619-BS-07A	Kitchen	12"x12" Floor Tile – tan mottled
101619-BS-07B	Kitchen	12"x12" Floor Tile – tan mottled
101619-BS-08A	Kitchen	Yellow adhesive associated with 12"x12" Floor Tile – tan mottled
101619-BS-08B	Kitchen	Yellow adhesive associated with 12"x12" Floor Tile – tan mottled
101619-BS-09A	Kitchen	CMU block
101619-BS-09B	Kitchen	CMU block
101619-BS-10A	Kitchen	CMU mortar
101619-BS-10B	Kitchen	CMU mortar
101619-BS-11A	Meeting Room adjacent Conference Room	4" cove base – light grey
101619-BS-11B	Meeting Room adjacent Conference Room	4" cove base – light grey

19 OCT 18
 CARLE PLACE, N.J.
 ANALYTICAL, INC.

[Signature]

[Signature] 10/18/19

[Signature] 10/18/19



FUSS & O'NEILL

Fuss & O'Neill EMSL Customer No. ENV154

www.fando.com

146 Hartford Road, Manchester, CT 06040

061923605

Phone (860) 646-2469

Sample ID	Sample Location	Type of Material
101619-BS-12A	Meeting Room adjacent Conference Room	Yellow adhesive associated with 4" cove base – light grey
101619-BS-12B	Meeting Room adjacent Conference Room	Yellow adhesive associated with 4" cove base – light grey
101619-BS-13A	Pipe Closet between Boys' & Girls' Lavatories	Brick
101619-BS-13B	Pipe Closet between Boys' & Girls' Lavatories	Brick
101619-BS-14A	Pipe Closet between Boys' & Girls' Lavatories	Brick mortar
101619-BS-14B	Pipe Closet between Boys' & Girls' Lavatories	Brick mortar
101619-BS-15A	Pipe Closet between Boys' & Girls' Lavatories	Insulation debris
101619-BS-15B	Pipe Closet between Boys' & Girls' Lavatories	Insulation debris
101619-BS-15C	Pipe Closet between Boys' & Girls' Lavatories	Insulation debris
101619-BS-16A	Boys' Lavatory	White sink caulk
101619-BS-16B	Girls' Lavatory	White sink caulk
101619-BS-17A	Boys' Lavatory	Dark grey pebbled laminate countertop
101619-BS-17B	Boys' Lavatory	Dark grey pebbled laminate countertop
101619-BS-18A	Boys' Lavatory	Adhesive associated with Dark grey pebbled laminate countertop
101619-BS-18B	Boys' Lavatory	Adhesive associated with Dark grey pebbled laminate countertop
101619-BS-19A	Boys' Lavatory	4" blue ceramic wall tile
101619-BS-19B	Boys' Lavatory	4" blue ceramic wall tile
101619-BS-20A	Boys' Lavatory	Grout associated with 4" blue ceramic wall tile
101619-BS-20B	Boys' Lavatory	Grout associated with 4" blue ceramic wall tile
101619-BS-21A	Boys' Lavatory	Adhesive associated with 4" blue ceramic wall tile
101619-BS-21B	Boys' Lavatory	Adhesive associated with 4" blue ceramic wall tile
101619-BS-22A	Boys' Lavatory (also in Girls' Lavatory)	4" black ceramic wall base
101619-BS-22B	Boys' Lavatory (also in Girls' Lavatory)	4" black ceramic wall base
101619-BS-23A	Boys' Lavatory (also in Girls' Lavatory)	Setting material for 4" black ceramic wall base
101619-BS-23B	Boys' Lavatory (also in Girls' Lavatory)	Setting material for 4" black ceramic wall base
101619-BS-24A	Boys' Lavatory (also in Girls' Lavatory)	Brown mosaic ceramic floor tile
101619-BS-24B	Boys' Lavatory (also in Girls' Lavatory)	Brown mosaic ceramic floor tile

19 OCT 17 AM 5:38
 POL. A. APALITOGA, M.D.
 CHARLE PLACE, NY

Joseph
 10/17/19 11:18 pm
 KAW 10-19 in
 10/18/19
 Ommito Raurattar
 10/18/19



FUSS & O'NEILL

Fuss & O'Neill EMSL Customer No. ENV154

www.fando.com

146 Hartford Road, Manchester, CT 06040

061923605

Phone (860) 646-2469

Sample ID	Sample Location	Type of Material
101619-BS-25A	Boys' Lavatory (also in Girls' Lavatory)	Grout for Brown mosaic ceramic floor tile
101619-BS-25B	Boys' Lavatory (also in Girls' Lavatory)	Grout for Brown mosaic ceramic floor tile
101619-BS-26A	Boys' Lavatory (also in Girls' Lavatory)	Setting material for Brown mosaic ceramic floor tile
101619-BS-26B	Boys' Lavatory (also in Girls' Lavatory)	Setting material for Brown mosaic ceramic floor tile
101619-BS-27A	Staff Lavatory	2" White Ceramic Wall Tile
101619-BS-27B	Staff Lavatory	2" White Ceramic Wall Tile
101619-BS-28A	Staff Lavatory	Grout for 2" White Ceramic Wall Tile
101619-BS-28B	Staff Lavatory	Grout for 2" White Ceramic Wall Tile
101619-BS-29A	Staff Lavatory	Setting Material for 2" White Ceramic Wall Tile
101619-BS-29B	Staff Lavatory	Setting Material for 2" White Ceramic Wall Tile
101619-BS-30A	Room 3	White Gypsum Board Wall
101619-BS-30B	Room 3	White Gypsum Board Wall
101619-BS-31A	Room 3	White Wall Joint Compound
101619-BS-31B	Room 3	White Wall Joint Compound
101619-BS-32A	Storage adjacent Main Office	Gray Gypsum Board Ceiling
101619-BS-32B	Storage adjacent Main Office	Gray Gypsum Board Ceiling
101619-BS-33A	Storage adjacent Main Office	White Joint Compound for Gypsum Board Ceiling
101619-BS-33B	Storage adjacent Main Office	White Joint Compound for Gypsum Board Ceiling
101619-BS-34A	Storage adjacent Main Office	Off-White Gypsum Board Ceiling
101619-BS-34B	Storage adjacent Main Office	Off-White Gypsum Board Ceiling
101619-BS-35A	Custodial Closet opposite Main Office	White Gypsum Board Ceiling
101619-BS-35B	Custodial Closet opposite Main Office	White Gypsum Board Ceiling
101619-BS-36A	Custodial Closet opposite Main Office	Textured Ceiling Paint and Joint Compound
101619-BS-36B	Custodial Closet opposite Main Office	Textured Ceiling Paint and Joint Compound
101619-BS-37A	Custodial Closet opposite Main Office	Textured Ceiling Paint
101619-BS-37B	Custodial Closet opposite Main Office	Textured Ceiling Paint
101619-BS-37C	Custodial Closet opposite Main Office	Textured Ceiling Paint

19 OCT 17 AM 9:36
 CARLE PLACE, NY
 CARLE PLACE, NY
 CARLE PLACE, NY

John *10/17/18*
10/18/18
11/1/18
10/18/18
10/18/18



FUSS & O'NEILL

Fuss & O'Neill EMSL Customer No. ENVI54

www.fando.com

146 Hartford Road, Manchester, CT 06040

061923605

Phone (860) 646-2469

Sample ID	Sample Location	Type of Material
1957 Wing		
101619-BS-38A	Room 6	Gray Mottled 12" x 12" Floor Tile
101619-BS-38B	Room 7	Gray Mottled 12" x 12" Floor Tile
101619-BS-39A	Room 6	Yellow Adhesive/Black Mastic for Gray Mottled 12" x 12" Floor Tile
101619-BS-39B	Room 7	Yellow Adhesive/Black Mastic for Gray Mottled 12" x 12" Floor Tile
101619-BS-40A	Room 6	Gray 4" Cove Base
101619-BS-40B	Room 7	Gray 4" Cove Base
101619-BS-41A	Room 6	Adhesive for Gray 4" Cove Base
101619-BS-41B	Room 7	Adhesive for Gray 4" Cove Base
101619-BS-42A	Hallway by Water Fountain	Red 4" Cove Base
101619-BS-42B	Hallway by Water Fountain	Red 4" Cove Base
101619-BS-43A	Hallway by Water Fountain	Adhesive for Red 4" Cove Base
101619-BS-43B	Hallway by Water Fountain	Adhesive for Red 4" Cove Base
101619-BS-44A	Hallway by Water Fountain	Plaster Wall Skim Coat
101619-BS-44B	Hallway by Water Fountain	Plaster Wall Skim Coat
101619-BS-44C	Hallway by Water Fountain	Plaster Wall Skim Coat
101619-BS-45A	Hallway by Water Fountain	Plaster Wall Base Coat
101619-BS-45B	Hallway by Water Fountain	Plaster Wall Base Coat
101619-BS-45C	Hallway by Water Fountain	Plaster Wall Base Coat
101619-BS-46A	Hallway by Water Fountain	Gray Gypsum Board Wall
101619-BS-46B	Hallway by Water Fountain	Gray Gypsum Board Wall
101619-BS-47A	Hallway by Water Fountain	White Joint Compound for Gray Gypsum Board Wall
101619-BS-47B	Hallway by Water Fountain	White Joint Compound for Gray Gypsum Board Wall
101619-BS-48A	Hallway by Water Fountain	Gray Gypsum Board Ceiling
101619-BS-48B	Hallway by Water Fountain	Gray Gypsum Board Ceiling
101619-BS-49A	Hallway by Water Fountain	White Joint Compound for Gray Gypsum Board Ceiling
101619-BS-49B	Hallway by Water Fountain	White Joint Compound for Gray Gypsum Board Ceiling

19 OCT 17 AM 9:38
 ANALYTICAL, INC.
 CATTLE PLACE, NY

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10/18/19

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201819



061923605

Sample ID	Sample Location	Type of Material
1963 Wing		
101619-BS-50A	Hallway above Ceiling	Older Fiberglass Pipe Wrap w/Black Coating
101619-BS-50B	Hallway above Ceiling	Older Fiberglass Pipe Wrap w/Black Coating
101619-BS-51A	Storage Room	CMU Block
101619-BS-51B	Server/Storage Room	CMU Block
101619-BS-52A	Storage Room	Mortar for CMU Block
101619-BS-52B	Server/Storage Room	Mortar for CMU Block
101619-BS-53A	Room 12	Interior of Partition Wall
101619-BS-53B	Room 12	Interior of Partition Wall
101619-BS-54A	Room 12	Gypsum Board Exterior of Partition Wall
101619-BS-54B	Room 12	Gypsum Board Exterior of Partition Wall
101619-BS-55A	1957/1963 Transition Hallway	Gypsum Board Fire Wall
101619-BS-55B	1957/1963 Transition Hallway	Gypsum Board Fire Wall
101619-BS-56A	1957/1963 Transition Hallway	White Joint Compound for Gypsum Board Fire Wall
101619-BS-56B	1957/1963 Transition Hallway	White Joint Compound for Gypsum Board Fire Wall
101619-BS-57A	Girl's Lavatory between Rooms 16 and 14	Pink Mosaic Ceramic Floor Tile
101619-BS-57B	Girl's Lavatory between Rooms 12 and 10	Pink Mosaic Ceramic Floor Tile
101619-BS-58A	Girl's Lavatory between Rooms 16 and 14	Grout for Pink Mosaic Ceramic Floor Tile
101619-BS-58B	Girl's Lavatory between Rooms 12 and 10	Grout for Pink Mosaic Ceramic Floor Tile
101619-BS-59A	Girl's Lavatory between Rooms 16 and 14	Setting Material for Pink Mosaic Ceramic Floor Tile
101619-BS-59B	Girl's Lavatory between Rooms 12 and 10	Setting Material for Pink Mosaic Ceramic Floor Tile
101619-BS-60A	Boy's Lavatory between Rooms 16 and 14	Blue Mosaic Ceramic Floor Tile
101619-BS-60B	Boy's Lavatory between Rooms 12 and 10	Blue Mosaic Ceramic Floor Tile
101619-BS-61A	Boy's Lavatory between Rooms 16 and 14	Grout for Blue Mosaic Ceramic Floor Tile
101619-BS-61B	Boy's Lavatory between Rooms 12 and 10	Grout for Blue Mosaic Ceramic Floor Tile
101619-BS-62A	Boy's Lavatory between Rooms 16 and 14	Setting Material for Blue Mosaic Ceramic Floor Tile
101619-BS-62B	Boy's Lavatory between Rooms 12 and 10	Setting Material for Blue Mosaic Ceramic Floor Tile

Kohn *BVA*

James Smith
10/17/19

10/18/19

Domestic Rowan

10/15/19

10/15/19



FUSS & O'NEILL

Fuss & O'Neill EMSL Customer No. ENVI54

www.fando.com

146 Hartford Road, Manchester, CT 06040

061923605

Phone (860) 646-2469

Sample ID	Sample Location	Type of Material
101619-BS-63A	Girl's Lavatory between Rooms 16 and 14	Pink 4" Ceramic Wall Tile
101619-BS-63B	Girl's Lavatory between Rooms 12 and 10	Pink 4" Ceramic Wall Tile
101619-BS-64A	Girl's Lavatory between Rooms 16 and 14	Grout for Pink 4" Ceramic Wall Tile
101619-BS-64B	Girl's Lavatory between Rooms 12 and 10	Grout for Pink 4" Ceramic Wall Tile
101619-BS-65A	Girl's Lavatory between Rooms 16 and 14	Adhesive for Pink 4" Ceramic Wall Tile
101619-BS-65B	Girl's Lavatory between Rooms 12 and 10	Adhesive for Pink 4" Ceramic Wall Tile
101619-BS-66A	Boy's Lavatory between Rooms 16 and 14	Blue 4" Ceramic Wall Tile
101619-BS-66B	Boy's Lavatory between Rooms 12 and 10	Blue 4" Ceramic Wall Tile
101619-BS-67A	Boy's Lavatory between Rooms 16 and 14	Grout for Blue 4" Ceramic Wall Tile
101619-BS-67B	Boy's Lavatory between Rooms 12 and 10	Grout for Blue 4" Ceramic Wall Tile
101619-BS-68A	Boy's Lavatory between Rooms 16 and 14	Adhesive for Blue 4" Ceramic Wall Tile
101619-BS-68B	Boy's Lavatory between Rooms 12 and 10	Adhesive for Blue 4" Ceramic Wall Tile
101619-BS-69A	1957/1963 Transition Hallway	Red Fire Stop Caulk
101619-BS-69B	1957/1963 Transition Hallway	Red Fire Stop Caulk
101619-BS-70A	Room 10	White Caulk at Counter/CMU Junction
101619-BS-70B	Room 10	White Caulk at Counter/CMU Junction
101619-BS-71A	Girl's Lavatory	White Caulk at Counter/Ceramic Wall Tile Junction
101619-BS-71B	Boy's Lavatory	White Caulk at Counter/Ceramic Wall Tile Junction
101619-BS-72A	Room 14	Tan Pebble Laminate Countertop/Adhesive (Backsplash)
101619-BS-72B	Room 14	Tan Pebble Laminate Countertop/Adhesive (Countertop)
101619-BS-73A	Girl's Lavatory	Off-White Countertop/Adhesive
101619-BS-73B	Boy's Lavatory	Off-White Countertop/Adhesive
101619-BS-74A	Nurse's Office	Coral Countertop/Adhesive
101619-BS-74B	Nurse's Office	Coral Countertop/Adhesive
101619-BS-75A	Room 10	Gray Sink Undercoat
101619-BS-75B	Room 16	Gray Sink Undercoat
101619-BS-76A	Nurse's Office	Pink Sink Undercoat

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Sample ID	Sample Location	Type of Material
101619-BS-76B	Nurse's Office	Pink Sink Undercoat
1988 Wing		
101619-BS-77A	Art Room	CMU Block
101619-BS-77B	Copy Room	CMU Block
101619-BS-78A	Art Room	Mortar for CMU Block
101619-BS-78B	Copy Room	Mortar for CMU Block
101619-BS-79A	Staff Lavatory	White Gypsum Board Ceiling
101619-BS-79B	Staff Lavatory	White Gypsum Board Ceiling
101619-BS-80A	Staff Lavatory	Joint Compound/Textured Ceiling Paint for White Gypsum Board Ceiling
101619-BS-80B	Staff Lavatory	Joint Compound/Textured Ceiling Paint for White Gypsum Board Ceiling
101619-BS-81A	Staff Lavatory	White Gypsum Board Ceiling/Joint Compound/Textured Ceiling Paint Composite
101619-BS-82A	Girl's Lavatory	Tan 4" Ceramic Wall Tile
101619-BS-82B	Staff Lavatory	Tan 4" Ceramic Wall Tile
101619-BS-83A	Girl's Lavatory	Grout for Tan 4" Ceramic Wall Tile
101619-BS-83B	Staff Lavatory	Grout for Tan 4" Ceramic Wall Tile
101619-BS-84A	Girl's Lavatory	Adhesive for Tan 4" Ceramic Wall Tile
101619-BS-84B	Staff Lavatory	Adhesive for Tan 4" Ceramic Wall Tile
101619-BS-85A	Art Room	Tan 4" Cove Base
101619-BS-85B	Art Room	Tan 4" Cove Base
101619-BS-86A	Art Room	Adhesive for Tan 4" Cove Base
101619-BS-86B	Art Room	Adhesive for Tan 4" Cove Base
101619-BS-87A	Media-Work Room	Red Countertop/Adhesive
101619-BS-87B	Media Work Room	Red Countertop/Adhesive
101619-BS-88A	Art Room	Black Backsplash Glue
101619-BS-88B	Art Room	Black Backsplash Glue
101619-BS-89A	Media Work Room	White Sink Undercoat
101619-BS-89B	Media Work Room	White Sink Undercoat

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Sample ID	Sample Location	Type of Material
101619-BS-90A	Staff Lavatory (above ceiling)	Pink Fire Stop Caulk
101619-BS-90B	Staff Lavatory (above ceiling)	Pink Fire Stop Caulk
2000 Wing		
101619-BS-91A	Custodial Storage	CMU Block
101619-BS-91B	Custodial Storage	CMU Block
101619-BS-92A	Custodial Storage	Mortar for CMU Block
101619-BS-92B	Custodial Storage	Mortar for CMU Block
101619-BS-93A	Custodial Storage	White Gypsum Board Ceiling
101619-BS-93B	Custodial Storage	White Gypsum Board Ceiling
101619-BS-94A	Custodial Storage	White Joint Compound for White Gypsum Board Ceiling
101619-BS-94B	Custodial Storage	White Joint Compound for White Gypsum Board Ceiling
101619-BS-95A	Girl's Lavatory by Gym	White 2" Ceramic Wall Tile
101619-BS-95B	Custodial Storage	White 2" Ceramic Wall Tile
101619-BS-96A	Girl's Lavatory by Gym	Grout for White 2" Ceramic Wall Tile
101619-BS-96B	Custodial Storage	Grout for White 2" Ceramic Wall Tile
101619-BS-97A	Girl's Lavatory by Gym	Adhesive for White 2" Ceramic Wall Tile
101619-BS-97B	Custodial Storage	Adhesive for White 2" Ceramic Wall Tile
101619-BS-98A	Girl's Lavatory by Gym	White 2" Ceramic Floor Tile
101619-BS-98B	Girl's Lavatory by Gym	White 2" Ceramic Floor Tile
101619-BS-99A	Girl's Lavatory by Gym	Grout for White 2" Ceramic Floor Tile
101619-BS-99B	Girl's Lavatory by Gym	Grout for White 2" Ceramic Floor Tile
101619-BS-100A	Girl's Lavatory by Gym	Adhesive for White 2" Ceramic Floor Tile
101619-BS-100B	Girl's Lavatory by Gym	Adhesive for White 2" Ceramic Floor Tile
101619-BS-101A	Band Room 26	Tan Pebble Laminate Countertop/Red Adhesive/Caulk
101619-BS-101B	Band Room 26	Tan Pebble Laminate Countertop/Red Adhesive/Caulk
Ceiling Tiles		
101619-BS-102A	1957 Wing Corridor	2' x 2' Light Textured Suspended Ceiling Tile

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 Page 8 of 9

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Sample ID	Sample Location	Type of Material
101619-BS-102B	1988 Wing Corridor	2' x 2' Light Textured Suspended Ceiling Tile
101619-BS-102C	2000 Wing Corridor	2' x 2' Light Textured Suspended Ceiling Tile
101619-BS-103A	1947 Wing Girl's Lavatory	2' x 4' Pinholes and Fissures Suspended Ceiling Tile (2' x 2' Look)
101619-BS-103B	1947 Wing Boy's Lavatory	2' x 4' Pinholes and Fissures Suspended Ceiling Tile (2' x 2' Look)
101619-BS-103C	1963 Wing Nurse's Office	2' x 4' Pinholes and Fissures Suspended Ceiling Tile (2' x 2' Look)
101619-BS-104A	1963 Wing Storage Room	2' x 4' with Holes Suspended Ceiling Tile
101619-BS-104B	1963 Wing Server/Storage Room	2' x 4' with Holes Suspended Ceiling Tile
101619-BS-105A	1988 Wing Boy's Bathroom	2' x 4' Textured with Holes Suspended Ceiling Tile
101619-BS-105B	1988 Wing Boy's Bathroom	2' x 4' Textured with Holes Suspended Ceiling Tile

Analysis Method: PLM TEM Other _____ Turnaround Time: 48 hours

Based on the turnaround time indicated above, analyses are due to Fuss & O'Neill on or before this date: _____ Please call Fuss & O'Neill if analyses will not be completed for requested t/a/t at (860) 646-2469.

Email Results to: LabResults@fando.com and KPane@fando.com Do Not Mail Hard Copy Report
Total # of Samples: 217

Special Instructions: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. Do Not Point Count. If NOB group sample results are 0% - < 1% by PLM, analyze only "A" group sample above by TEM NOB, per group, unless you are told otherwise. Do Not Analyze Sample 81A if Samples 78A-79B are NAD.

Samples collected by: BSilverman & SVanderveer Date: 10/14-15/2019 Time: _____

Samples Sent by: Ben Gil Date: 10/16/19 Time: PM

Samples Received by: _____ Date: 10/17/19 Time: 9:38am

Shipped To: EMSL Other _____

Method of Shipment: FedEx Lab Drop Off Other _____

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EMSL Order: 061923605

Customer ID: ENVI54

Customer PO: 20160168.W30

Project ID:

Attention: Kathleen Pane
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Phone: (860) 510-9290

Fax:

Received Date: 10/17/2019 9:38 AM

Analysis Date: 10/17/2019 - 10/18/2019

Collected Date: 10/16/2019

Project: Hebron Elementary School, #20160168.W30, 92 Church St, Hebron CT, Throughout

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
101619-BS-01A <small>061923605-0001</small>	Basement - Hot Water Heater Room - Fiberglass Pipe Wrap	White/Silver Fibrous Homogeneous	78% Cellulose 6% Glass	16% Non-fibrous (Other)	None Detected
101619-BS-01B <small>061923605-0002</small>	Basement - Hot Water Heater Room - Fiberglass Pipe Wrap	White/Silver Fibrous Heterogeneous	85% Cellulose 3% Glass	12% Non-fibrous (Other)	None Detected
101619-BS-02A <small>061923605-0003</small>	Basement - Hot Water Heater Room - Endcap Sealant	Tan/White Non-Fibrous Heterogeneous	6% Cellulose 3% Glass	91% Non-fibrous (Other)	None Detected
101619-BS-02B <small>061923605-0004</small>	Basement - Hot Water Heater Room - Endcap Sealant	Tan/White Non-Fibrous Heterogeneous	8% Cellulose 4% Glass	88% Non-fibrous (Other)	None Detected
101619-BS-03A <small>061923605-0005</small>	Basement - Boiler Room 1 - Mudded Pipe Fitting Insulation - Gray	Tan Non-Fibrous Homogeneous	3% Cellulose 12% Min. Wool	85% Non-fibrous (Other)	None Detected
101619-BS-03B <small>061923605-0006</small>	Basement - Boiler Room 1 - Mudded Pipe Fitting Insulation - Gray	Tan Non-Fibrous Homogeneous	3% Cellulose 12% Min. Wool	85% Non-fibrous (Other)	None Detected
101619-BS-03C <small>061923605-0007</small>	Basement - Boiler Room 1 - Mudded Pipe Fitting Insulation - Gray	Tan Non-Fibrous Homogeneous	4% Cellulose 10% Min. Wool	86% Non-fibrous (Other)	None Detected
101619-BS-04A <small>061923605-0008</small>	Basement - Boiler Room 1 - Mudded Pipe Fitting Insulation - White	Tan Non-Fibrous Homogeneous	3% Cellulose 13% Min. Wool	84% Non-fibrous (Other)	None Detected
101619-BS-04B <small>061923605-0009</small>	Basement - Boiler Room 1 - Mudded Pipe Fitting Insulation - White	Tan/White Non-Fibrous Heterogeneous	3% Cellulose 11% Min. Wool	86% Non-fibrous (Other)	None Detected
101619-BS-04C <small>061923605-0010</small>	Basement - Boiler Room 1 - Mudded Pipe Fitting Insulation - White	Tan/White Non-Fibrous Heterogeneous	4% Cellulose 11% Min. Wool	85% Non-fibrous (Other)	None Detected
101619-BS-05A <small>061923605-0011</small>	Kitchen - 4" Cove Base - Gray/Tan	Gray/Tan Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
101619-BS-05B <small>061923605-0012</small>	Kitchen - 4" Cove Base - Gray/Tan	Gray/Tan Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
101619-BS-06A <small>061923605-0013</small>	Kitchen - Tan Adhesive associated with 4" Cove Base - Gray/Tan	Tan Non-Fibrous Homogeneous	5% Cellulose 1% Synthetic	94% Non-fibrous (Other)	None Detected

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EMSL Order: 061923605
Customer ID: ENVI54
Customer PO: 20160168.W30
Project ID:

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
101619-BS-06B <small>061923605-0014</small>	Kitchen - Tan Adhesive associated with 4" Cove Base - Gray/Tan	Tan Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
101619-BS-07A <small>061923605-0015</small>	Kitchen - 12"x12" Floor Tile - Tan Mottled	Tan Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
101619-BS-07B <small>061923605-0016</small>	Kitchen - 12"x12" Floor Tile - Tan Mottled	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-08A <small>061923605-0017</small>	Kitchen - Yellow Adhesive associated with 12"x12" Floor Tile - Tan Mottled	Yellow Non-Fibrous Homogeneous	6% Cellulose 1% Synthetic	93% Non-fibrous (Other)	None Detected
101619-BS-08B <small>061923605-0018</small>	Kitchen - Yellow Adhesive associated with 12"x12" Floor Tile - Tan Mottled	Yellow Non-Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
101619-BS-09A <small>061923605-0019</small>	Kitchen - CMU Block	Gray/Tan/White Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-09B <small>061923605-0020</small>	Kitchen - CMU Block	Gray/White Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-10A <small>061923605-0021</small>	Kitchen - CMU Mortar	Tan/White Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-10B <small>061923605-0022</small>	Kitchen - CMU Mortar	Gray/Tan/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-11A <small>061923605-0023</small>	Meeting Room adjacent Conference Room - 4" Cove Base - Light Gray	Gray/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-11B <small>061923605-0024</small>	Meeting Room adjacent Conference Room - 4" Cove Base - Light Gray	Gray/White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
101619-BS-12A <small>061923605-0025</small>	Meeting Room adjacent Conference Room - Yellow Adhesive associated with 4" Cove Base - Light Gray	Yellow Non-Fibrous Homogeneous	4% Cellulose	96% Non-fibrous (Other)	None Detected
101619-BS-12B <small>061923605-0026</small>	Meeting Room adjacent Conference Room - Yellow Adhesive associated with 4" Cove Base - Light Gray	Yellow Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected
101619-BS-13A <small>061923605-0027</small>	Pipe Closet between Boys' & Girls' Lavatories - Brick	Brown/Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-13B <small>061923605-0028</small>	Pipe Closet between Boys' & Girls' Lavatories - Brick	Brown/Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
101619-BS-14A <i>061923605-0029</i>	Pipe Closet between Boys' & Girls' Lavatories - Brick Mortar	Tan/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-14B <i>061923605-0030</i>	Pipe Closet between Boys' & Girls' Lavatories - Brick Mortar	Tan Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
101619-BS-15A <i>061923605-0031</i>	Pipe Closet between Boys' & Girls' Lavatories - Insulation Debris <i>The Sample is Blow-in Insulation.</i>	Brown Fibrous Homogeneous	88% Cellulose	12% Non-fibrous (Other)	None Detected
101619-BS-15B <i>061923605-0032</i>	Pipe Closet between Boys' & Girls' Lavatories - Insulation Debris <i>The Sample is Blow-in Insulation.</i>	Brown Fibrous Homogeneous	89% Cellulose	11% Non-fibrous (Other)	None Detected
101619-BS-15C <i>061923605-0033</i>	Pipe Closet between Boys' & Girls' Lavatories - Insulation Debris	Brown Fibrous Homogeneous	91% Cellulose	9% Non-fibrous (Other)	None Detected
101619-BS-16A <i>061923605-0034</i>	Boys' Lavatory - White Sink Caulk	Tan/White Non-Fibrous Homogeneous	6% Cellulose	94% Non-fibrous (Other)	None Detected
101619-BS-16B <i>061923605-0035</i>	Girls' Lavatory - White Sink Caulk	Tan/White Non-Fibrous Heterogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
101619-BS-17A <i>061923605-0036</i>	Boys' Lavatory - Dark Gray Pebbled Laminate Countertop	Brown/Gray Non-Fibrous Homogeneous	55% Cellulose	45% Non-fibrous (Other)	None Detected
101619-BS-17B <i>061923605-0037</i>	Boys' Lavatory - Dark Gray Pebbled Laminate Countertop	Brown/Gray Non-Fibrous Heterogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected
101619-BS-18A <i>061923605-0038</i>	Boys' Lavatory - Adhesive associated with Dark Gray Pebbled Laminate Countertop	Tan Non-Fibrous Homogeneous	12% Cellulose	88% Non-fibrous (Other)	None Detected
101619-BS-18B <i>061923605-0039</i>	Boys' Lavatory - Adhesive associated with Dark Gray Pebbled Laminate Countertop	Tan Non-Fibrous Homogeneous	12% Cellulose	88% Non-fibrous (Other)	None Detected
101619-BS-19A <i>061923605-0040</i>	Boys' Lavatory - 4" Blue Ceramic Wall Tile	White/Blue Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-19B <i>061923605-0041</i>	Boys' Lavatory - 4" Blue Ceramic Wall Tile	White/Blue Non-Fibrous Heterogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
101619-BS-20A <i>061923605-0042</i>	Boys' Lavatory - Grout associated with 4" Blue Ceramic Wall Tile	White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
101619-BS-20B <i>061923605-0043</i>	Boys' Lavatory - Grout associated with 4" Blue Ceramic Wall Tile	White Non-Fibrous Homogeneous	4% Cellulose	96% Non-fibrous (Other)	None Detected

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
101619-BS-21A <small>061923605-0044</small>	Boys' Lavatory - Adhesive associated with 4" Blue Ceramic Wall Tile	Tan Non-Fibrous Homogeneous	3% Cellulose	97% Non-fibrous (Other)	None Detected
101619-BS-21B <small>061923605-0045</small>	Boys' Lavatory - Adhesive associated with 4" Blue Ceramic Wall Tile	Tan Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
101619-BS-22A <small>061923605-0046</small>	Boys' Lavatory (also in Girls' Lavatory) - 4" Black Ceramic Wall Base	Tan/Black Non-Fibrous Heterogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected
101619-BS-22B <small>061923605-0047</small>	Boys' Lavatory (also in Girls' Lavatory) - 4" Black Ceramic Wall Base	Tan/Black Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
101619-BS-23A <small>061923605-0048</small>	Boys' Lavatory (also in Girls' Lavatory) - Setting Material for 4" Black Ceramic Wall Base	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-23B <small>061923605-0049</small>	Boys' Lavatory (also in Girls' Lavatory) - Setting Material for 4" Black Ceramic Wall Base	Tan Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
101619-BS-24A <small>061923605-0050</small>	Boys' Lavatory (also in Girls' Lavatory) - Brown Mosaic Ceramic Floor Tile	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-24B <small>061923605-0051</small>	Boys' Lavatory (also in Girls' Lavatory) - Brown Mosaic Ceramic Floor Tile	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-25A <small>061923605-0052</small>	Boys' Lavatory (also in Girls' Lavatory) - Grout for Brown Mosaic Ceramic Floor Tile	Gray Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
101619-BS-25B <small>061923605-0053</small>	Boys' Lavatory (also in Girls' Lavatory) - Grout for Brown Mosaic Ceramic Floor Tile	Gray Non-Fibrous Homogeneous	4% Cellulose	96% Non-fibrous (Other)	None Detected
101619-BS-26A <small>061923605-0054</small>	Boys' Lavatory (also in Girls' Lavatory) - Setting Material for Brown Mosaic Ceramic Floor Tile	Gray Non-Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
101619-BS-26B <small>061923605-0055</small>	Boys' Lavatory (also in Girls' Lavatory) - Setting Material for Brown Mosaic Ceramic Floor Tile	Gray Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
101619-BS-27A <small>061923605-0056</small>	Staff Lavatory - 2" White Ceramic Wall Tile	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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EMSL Order: 061923605

Customer ID: ENVI54

Customer PO: 20160168.W30

Project ID:

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
101619-BS-27B <i>061923605-0057</i>	Staff Lavatory - 2" White Ceramic Wall Tile	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-28A <i>061923605-0058</i>	Staff Lavatory - Grout for 2" White Ceramic Wall Tile	Gray/White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
101619-BS-28B <i>061923605-0059</i>	Staff Lavatory - Grout for 2" White Ceramic Wall Tile	Gray/White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
101619-BS-29A <i>061923605-0060</i>	Staff Lavatory - Grout for 2" White Ceramic Wall Tile <i>The sample is mostly Tan Adhesive attached to a thin layer of Setting Bed. The sample was analyzed as a composite.</i>	Tan/White Non-Fibrous Heterogeneous	3% Cellulose	97% Non-fibrous (Other)	None Detected
101619-BS-29B <i>061923605-0061</i>	Staff Lavatory - Grout for 2" White Ceramic Wall Tile <i>The sample is mostly Tan Adhesive attached to a thin layer of Setting Bed. The sample was analyzed as a composite.</i>	Tan/White Non-Fibrous Homogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
101619-BS-30A <i>061923605-0062</i>	Room 3 - White Gypsum Board - Wall	Brown/Tan Non-Fibrous Heterogeneous	8% Cellulose 3% Glass	89% Non-fibrous (Other)	None Detected
101619-BS-30B <i>061923605-0063</i>	Room 3 - White Gypsum Board - Wall	Brown/Tan Non-Fibrous Homogeneous	7% Cellulose <1% Glass	93% Non-fibrous (Other)	None Detected
101619-BS-31A <i>061923605-0064</i>	Room 3 - White Joint Compound - Wall	White Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-31B <i>061923605-0065</i>	Room 3 - White Joint Compound - Wall	White Non-Fibrous Heterogeneous	<1% Cellulose	100% Non-fibrous (Other)	None Detected
101619-BS-32A <i>061923605-0066</i>	Storage adjacent Main Office - Gray Gypsum Board - Ceiling	Brown/Tan Non-Fibrous Heterogeneous	6% Cellulose 1% Glass	93% Non-fibrous (Other)	None Detected
101619-BS-32B <i>061923605-0067</i>	Storage adjacent Main Office - Gray Gypsum Board - Ceiling	Brown/Tan Non-Fibrous Heterogeneous	8% Cellulose <1% Glass	92% Non-fibrous (Other)	None Detected
101619-BS-33A <i>061923605-0068</i>	Storage adjacent Main Office - White Joint Compound for Gypsum Board - Ceiling	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-33B <i>061923605-0069</i>	Storage adjacent Main Office - White Joint Compound for Gypsum Board - Ceiling	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-34A <i>061923605-0070</i>	Storage adjacent Main Office - Off-White Gypsum Board - Ceiling	Brown/Tan Non-Fibrous Heterogeneous	7% Cellulose	93% Non-fibrous (Other)	None Detected
101619-BS-34B <i>061923605-0071</i>	Storage adjacent Main Office - Off-White Gypsum Board - Ceiling	Brown/Tan Non-Fibrous Heterogeneous	8% Cellulose	92% Non-fibrous (Other)	None Detected

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Project ID:

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
101619-BS-35A <small>061923605-0072</small>	Custodial Closet opposite Main Office - White Gypsum Board - Ceiling	Tan Non-Fibrous Homogeneous	8% Cellulose	2% Gypsum 90% Non-fibrous (Other)	None Detected
101619-BS-35B <small>061923605-0073</small>	Custodial Closet opposite Main Office - White Gypsum Board - Ceiling	Brown/White Non-Fibrous Heterogeneous	8% Cellulose 1% Glass	91% Non-fibrous (Other)	None Detected
101619-BS-36A <small>061923605-0074</small>	Custodial Closet opposite Main Office - Textured Ceiling Paint and Joint Compound	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-36B <small>061923605-0075</small>	Custodial Closet opposite Main Office - Textured Ceiling Paint and Joint Compound	White Non-Fibrous Homogeneous	2% Cellulose 5% Glass	93% Non-fibrous (Other)	None Detected
101619-BS-37A <small>061923605-0076</small>	Custodial Closet opposite Main Office - Textured Ceiling Paint	White Non-Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
101619-BS-37B <small>061923605-0077</small>	Custodial Closet opposite Main Office - Textured Ceiling Paint	White Non-Fibrous Homogeneous	6% Cellulose	94% Non-fibrous (Other)	None Detected
101619-BS-37C <small>061923605-0078</small>	Custodial Closet opposite Main Office - Textured Ceiling Paint	White Non-Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
101619-BS-38A <small>061923605-0079</small>	Room 6 - Gray Mottled 12"x12" Floor Tile	Gray Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
101619-BS-38B <small>061923605-0080</small>	Room 7 - Gray Mottled 12"x12" Floor Tile	Gray Non-Fibrous Homogeneous	1% Cellulose	99% Non-fibrous (Other)	None Detected
101619-BS-39A <small>061923605-0081</small>	Room 6 - Yellow Adhesive/Black Mastic for Gray Mottled 12"x12" Floor Tile	Black/Yellow Non-Fibrous Heterogeneous	4% Cellulose 2% Synthetic 2% Glass	92% Non-fibrous (Other)	None Detected
101619-BS-39B <small>061923605-0082</small>	Room 7 - Yellow Adhesive/Black Mastic for Gray Mottled 12"x12" Floor Tile	Black/Yellow Non-Fibrous Homogeneous	4% Cellulose 1% Synthetic 2% Glass	93% Non-fibrous (Other)	None Detected
101619-BS-40A <small>061923605-0083</small>	Room 6 - Gray 4" Cove Base	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-40B <small>061923605-0084</small>	Room 7 - Gray 4" Cove Base	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-41A <small>061923605-0085</small>	Room 6 - Adhesive for Gray 4" Cove Base	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-41B <small>061923605-0086</small>	Room 7 - Adhesive for Gray 4" Cove Base	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-42A <small>061923605-0087</small>	Hallway by Water Fountain - Adhesive for Gray 4" Cove Base	Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
101619-BS-42B <small>061923605-0088</small>	Hallway by Water Fountain - Adhesive for Gray 4" Cove Base	Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-43A <small>061923605-0089</small>	Hallway by Water Fountain - Adhesive for Red 4" Cove Base	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-43B <small>061923605-0090</small>	Hallway by Water Fountain - Adhesive for Red 4" Cove Base	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-44A <small>061923605-0091</small>	Hallway by Water Fountain - Plaster Wall - Skim Coat	White Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-44B <small>061923605-0092</small>	Hallway by Water Fountain - Plaster Wall - Skim Coat	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-44C <small>061923605-0093</small>	Hallway by Water Fountain - Plaster Wall - Skim Coat	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-45A <small>061923605-0094</small>	Hallway by Water Fountain - Plaster Wall - Base Coat	Gray Non-Fibrous Homogeneous	3% Cellulose	97% Non-fibrous (Other)	None Detected
101619-BS-45B <small>061923605-0095</small>	Hallway by Water Fountain - Plaster Wall - Base Coat	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-45C <small>061923605-0096</small>	Hallway by Water Fountain - Plaster Wall - Base Coat	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-46A <small>061923605-0097</small>	Hallway by Water Fountain - Gray Gypsum Board - Wall	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-46B <small>061923605-0098</small>	Hallway by Water Fountain - Gray Gypsum Board - Wall	Gray Non-Fibrous Homogeneous	3% Cellulose	97% Non-fibrous (Other)	None Detected
101619-BS-47A <small>061923605-0099</small>	Hallway by Water Fountain - White Joint Compound for Gray Gypsum Board - Wall	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-47B <small>061923605-0100</small>	Hallway by Water Fountain - White Joint Compound for Gray Gypsum Board - Wall	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-48A <small>061923605-0101</small>	Hallway by Water Fountain - Gray Gypsum Board - Ceiling	Gray Non-Fibrous Homogeneous	4% Cellulose	96% Non-fibrous (Other)	None Detected
101619-BS-48B <small>061923605-0102</small>	Hallway by Water Fountain - Gray Gypsum Board - Ceiling	Gray Non-Fibrous Homogeneous	4% Cellulose	96% Non-fibrous (Other)	None Detected
101619-BS-49A <small>061923605-0103</small>	Hallway by Water Fountain - White Joint Compound for Gray Gypsum Board - Ceiling	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
101619-BS-49B <small>061923605-0104</small>	Hallway by Water Fountain - White Joint Compound for Gray Gypsum Board - Ceiling	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-50A <small>061923605-0105</small>	Hallway above Ceiling - Older Fiberglass Pipe Wrap w./ Black Coating	Tan/Black Non-Fibrous Homogeneous	30% Cellulose	70% Non-fibrous (Other)	None Detected
101619-BS-50B <small>061923605-0106</small>	Hallway above Ceiling - Older Fiberglass Pipe Wrap w./ Black Coating	Tan/Black Non-Fibrous Homogeneous	35% Cellulose	65% Non-fibrous (Other)	None Detected
101619-BS-51A <small>061923605-0107</small>	Storage Room - CMU Block	Various Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-51B <small>061923605-0108</small>	Server/Storage Room - CMU Block	Various Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-52A <small>061923605-0109</small>	Storage Room - Mortar for CMU Block	Various Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-52B <small>061923605-0110</small>	Server/Storage Room - Mortar for CMU Block	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-53A <small>061923605-0111</small>	Room 12 - Interior of Partition Wall	Brown/Red Fibrous Heterogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected
101619-BS-53B <small>061923605-0112</small>	Room 12 - Interior of Partition Wall	Brown/Red Non-Fibrous Heterogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected
101619-BS-54A <small>061923605-0113</small>	Room 12 - Gypsum Board - Exterior of Partition Wall	Gray/White Non-Fibrous Heterogeneous	6% Cellulose	94% Non-fibrous (Other)	None Detected
101619-BS-54B <small>061923605-0114</small>	Room 12 - Gypsum Board - Exterior of Partition Wall	Brown/Gray Non-Fibrous Heterogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
101619-BS-55A <small>061923605-0115</small>	1957/1963 Transition Hallway - Gypsum Board - Fire Wall	Gray Non-Fibrous Homogeneous	2% Cellulose <1% Glass	98% Non-fibrous (Other)	None Detected
101619-BS-55B <small>061923605-0116</small>	1957/1963 Transition Hallway - Gypsum Board - Fire Wall	Brown/Gray Fibrous Heterogeneous	6% Cellulose <1% Glass	94% Non-fibrous (Other)	None Detected
101619-BS-56A <small>061923605-0117</small>	1957/1963 Transition Hallway - White Joint Compound for Gypsum Board Fire Wall	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-56B <small>061923605-0118</small>	1957/1963 Transition Hallway - White Joint Compound for Gypsum Board Fire Wall	White/Pink Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-57A <small>061923605-0119</small>	Girls' Lavatory between Rooms 16 and 14 - Pink Mosaic Ceramic Floor Tile	Pink Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
101619-BS-57B <small>061923605-0120</small>	Girls' Lavatory between Rooms 12 and 10 - Pink Mosaic Ceramic Floor Tile	Pink Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-58A <small>061923605-0121</small>	Girls' Lavatory between Rooms 16 and 14 - Grout for Pink Mosaic Ceramic Floor Tile	Brown/Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-58B <small>061923605-0122</small>	Girls' Lavatory between Rooms 12 and 10 - Grout for Pink Mosaic Ceramic Floor Tile	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-59A <small>061923605-0123</small>	Girls' Lavatory between Rooms 16 and 14 - Setting Material for Pink Mosaic Ceramic Floor Tile	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-59B <small>061923605-0124</small>	Girls' Lavatory between Rooms 12 and 10 - Setting Material for Pink Mosaic Ceramic Floor Tile	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-60A <small>061923605-0125</small>	Boys' Lavatory between Rooms 16 and 14 - Blue Mosaic Ceramic Floor Tile	Blue Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-60B <small>061923605-0126</small>	Boys' Lavatory between Rooms 12 and 10 - Blue Mosaic Ceramic Floor Tile	Blue Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-61A <small>061923605-0127</small>	Boys' Lavatory between Rooms 16 and 14 - Grout for Blue Mosaic Ceramic Floor Tile	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-61B <small>061923605-0128</small>	Boys' Lavatory between Rooms 12 and 10 - Grout for Blue Mosaic Ceramic Floor Tile	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-62A <small>061923605-0129</small>	Boys' Lavatory between Rooms 16 and 14 - Setting Material for Blue Mosaic Ceramic Floor Tile	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-62B <small>061923605-0130</small>	Boys' Lavatory between Rooms 12 and 10 - Setting Material for Blue Mosaic Ceramic Floor Tile	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-63A <small>061923605-0131</small>	Girls' Lavatory between Rooms 16 and 14 - Pink 4" Ceramic Wall Tile	White/Pink Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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			% Fibrous	% Non-Fibrous	% Type
101619-BS-63B <small>061923605-0132</small>	Girls' Lavatory between Rooms 12 and 10 - Pink 4" Ceramic Wall Tile	White/Pink Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-64A <small>061923605-0133</small>	Girls' Lavatory between Rooms 16 and 14 - Grout for Pink 4" Ceramic Wall Tile	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-64B <small>061923605-0134</small>	Girls' Lavatory between Rooms 12 and 10 - Grout for Pink 4" Ceramic Wall Tile	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-65A <small>061923605-0135</small>	Girls' Lavatory between Rooms 16 and 14 - Adhesive for Pink 4" Ceramic Wall Tile <i>No adhesive to analyze.</i>				Insufficient Material
101619-BS-65B <small>061923605-0136</small>	Girls' Lavatory between Rooms 12 and 10 - Adhesive for Pink 4" Ceramic Wall Tile <i>No adhesive to analyze.</i>				Insufficient Material
101619-BS-66A <small>061923605-0137</small>	Boys' Lavatory between Rooms 16 and 14 - Blue 4" Ceramic Wall Tile	Blue Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-66B <small>061923605-0138</small>	Boys' Lavatory between Rooms 12 and 10 - Blue 4" Ceramic Wall Tile	Blue Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-67A <small>061923605-0139</small>	Boys' Lavatory between Rooms 16 and 14 - Grout for Blue 4" Ceramic Wall Tile	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-67B <small>061923605-0140</small>	Boys' Lavatory between Rooms 12 and 10 - Grout for Blue 4" Ceramic Wall Tile	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-68A <small>061923605-0141</small>	Boys' Lavatory between Rooms 16 and 14 - Adhesive for Blue 4" Ceramic Wall Tile <i>No adhesive to analyze.</i>				Insufficient Material
101619-BS-68B <small>061923605-0142</small>	Boys' Lavatory between Rooms 12 and 10 - Adhesive for Blue 4" Ceramic Wall Tile <i>No adhesive to analyze.</i>				Insufficient Material
101619-BS-69A <small>061923605-0143</small>	1957/1963 Transition Hallway - Red Fire Stop Caulk	Red Non-Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected

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			% Fibrous	% Non-Fibrous	% Type
101619-BS-69B <small>061923605-0144</small>	1957/1963 Transition Hallway - Red Fire Stop Caulk	Red Non-Fibrous Homogeneous	15% Glass	85% Non-fibrous (Other)	None Detected
101619-BS-70A <small>061923605-0145</small>	Room 10 - White Caulk at Counter/CMU Junction	White Non-Fibrous Homogeneous	3% Cellulose	97% Non-fibrous (Other)	None Detected
101619-BS-70B <small>061923605-0146</small>	Room 10 - White Caulk at Counter/CMU Junction	White Non-Fibrous Homogeneous	4% Cellulose	96% Non-fibrous (Other)	None Detected
101619-BS-71A <small>061923605-0147</small>	Girls' Lavatory - White Caulk at Counter/Ceramic Wall Tile Junction	White Non-Fibrous Homogeneous	10% Wollastonite	85% Non-fibrous (Other)	5% Anthophyllite
101619-BS-71B <small>061923605-0148</small>	Boys' Lavatory - White Caulk at Counter/Ceramic Wall Tile Junction				Positive Stop (Not Analyzed)
101619-BS-72A <small>061923605-0149</small>	Room 14 - Tan Pebble Laminate Countertop/Adhesive (Backsplash)	Brown/Tan Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
101619-BS-72B <small>061923605-0150</small>	Room 14 - Tan Pebble Laminate Countertop/Adhesive (Countertop)	Tan Non-Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
101619-BS-73A <small>061923605-0151</small>	Girls' Lavatory - Off-White Countertop/Adhesive	Tan Non-Fibrous Homogeneous	15% Cellulose	85% Non-fibrous (Other)	None Detected
101619-BS-73B <small>061923605-0152</small>	Boys' Lavatory - Off-White Countertop/Adhesive	Tan Non-Fibrous Homogeneous	15% Cellulose	85% Non-fibrous (Other)	None Detected
101619-BS-74A <small>061923605-0153</small>	Nurse's Office - Coral Countertop/Adhesive	Tan Non-Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
101619-BS-74B <small>061923605-0154</small>	Nurse's Office - Coral Countertop/Adhesive	Tan Non-Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
101619-BS-75A <small>061923605-0155</small>	Room 10 - Gray Sink Undercoat	Gray Non-Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
101619-BS-75B <small>061923605-0156</small>	Room 16 - Gray Sink Undercoat	Gray Non-Fibrous Homogeneous	12% Cellulose	88% Non-fibrous (Other)	None Detected
101619-BS-76A <small>061923605-0157</small>	Nurse's Office - Pink Sink Undercoat	Pink Non-Fibrous Homogeneous	3% Fibrous (Other)	97% Non-fibrous (Other)	None Detected
101619-BS-76B <small>061923605-0158</small>	Nurse's Office - Pink Sink Undercoat	Pink Non-Fibrous Homogeneous	4% Fibrous (Other)	96% Non-fibrous (Other)	None Detected
101619-BS-77A <small>061923605-0159</small>	Art Room - CMU Block	Gray/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-77B <small>061923605-0160</small>	Copy Room - CMU Block	Gray/White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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			% Fibrous	% Non-Fibrous	% Type
101619-BS-78A <small>061923605-0161</small>	Art Room - Mortar for CMU Block	Gray/Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-78B <small>061923605-0162</small>	Copy Room - Mortar for CMU Block	Gray/Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-79A <small>061923605-0163</small>	Staff Lavatory - White Gypsum Board Ceiling	White Non-Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
101619-BS-79B <small>061923605-0164</small>	Staff Lavatory - White Gypsum Board Ceiling	White Non-Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
101619-BS-80A <small>061923605-0165</small>	Staff Lavatory - Joint Compound/Textured Ceiling Paint for White Gypsum Board Ceiling	White Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
101619-BS-80B <small>061923605-0166</small>	Staff Lavatory - Joint Compound/Textured Ceiling Paint for White Gypsum Board Ceiling	White Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
101619-BS-81A <small>061923605-0167</small>	Staff Lavatory - White Gypsum Board Ceiling/Joint Compound/Textured Ceiling Paint Composite				Not Analyzed
<i>Not analyzed as per client instruction on pg. 9 of COC.</i>					
101619-BS-82A <small>061923605-0168</small>	Girls' Lavatory - Tan 4" Ceramic Wall Tile	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-82B <small>061923605-0169</small>	Staff Lavatory - Tan 4" Ceramic Wall Tile	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-83A <small>061923605-0170</small>	Girls' Lavatory - Grout for Tan 4" Ceramic Wall Tile	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-83B <small>061923605-0171</small>	Staff Lavatory - Grout for Tan 4" Ceramic Wall Tile	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-84A <small>061923605-0172</small>	Girls' Lavatory - Adhesive for Tan 4" Ceramic Wall Tile	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-84B <small>061923605-0173</small>	Staff Lavatory - Adhesive for Tan 4" Ceramic Wall Tile	Tan Non-Fibrous Homogeneous	3% Cellulose	97% Non-fibrous (Other)	None Detected
101619-BS-85A <small>061923605-0174</small>	Art Room - Tan 4" Cove Base	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-85B <small>061923605-0175</small>	Art Room - Tan 4" Cove Base	Tan/Clear Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-86A <small>061923605-0176</small>	Art Room - Adhesive for Tan 4" Cove Base	Clear Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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EMSL Order: 061923605
Customer ID: ENVI54
Customer PO: 20160168.W30
Project ID:

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
101619-BS-86B <small>061923605-0177</small>	Art Room - Adhesive for Tan 4" Cove Base	Clear Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-87A <small>061923605-0178</small>	Media Work Room - Red Countertop/Adhesive	Tan Non-Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
101619-BS-87B <small>061923605-0179</small>	Media Work Room - Red Countertop/Adhesive	Tan Non-Fibrous Homogeneous	11% Cellulose	89% Non-fibrous (Other)	None Detected
101619-BS-88A <small>061923605-0180</small>	Art Room - Black Backsplash Glue	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-88B <small>061923605-0181</small>	Art Room - Black Backsplash Glue	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-89A <small>061923605-0182</small>	Media Work Room - White Sink Undercoat	White Non-Fibrous Homogeneous	15% Cellulose	85% Non-fibrous (Other)	None Detected
101619-BS-89B <small>061923605-0183</small>	Media Work Room - White Sink Undercoat	White Non-Fibrous Homogeneous	12% Cellulose	88% Non-fibrous (Other)	None Detected
101619-BS-90A <small>061923605-0184</small>	Staff Lavatory (above ceiling) - Pink Fire Stop Caulk	Pink Non-Fibrous Homogeneous	4% Glass	96% Non-fibrous (Other)	None Detected
101619-BS-90B <small>061923605-0185</small>	Staff Lavatory (above ceiling) - Pink Fire Stop Caulk	Pink Non-Fibrous Homogeneous	3% Glass	97% Non-fibrous (Other)	None Detected
101619-BS-91A <small>061923605-0186</small>	Custodial Storage - CMU Block	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-91B <small>061923605-0187</small>	Custodial Storage - CMU Block	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-92A <small>061923605-0188</small>	Custodial Storage - Mortar for CMU Block	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-92B <small>061923605-0189</small>	Custodial Storage - Mortar for CMU Block	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-93A <small>061923605-0190</small>	Custodial Storage - White Gypsum Board Ceiling	Gray Non-Fibrous Homogeneous	5% Cellulose 2% Glass	93% Non-fibrous (Other)	None Detected
101619-BS-93B <small>061923605-0191</small>	Custodial Storage - White Gypsum Board Ceiling	Gray Fibrous Homogeneous	3% Cellulose 2% Glass	95% Non-fibrous (Other)	None Detected
101619-BS-94A <small>061923605-0192</small>	Custodial Storage - White Joint Compound for White Gypsum Board - Ceiling	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-94B <small>061923605-0193</small>	Custodial Storage - White Joint Compound for White Gypsum Board - Ceiling	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-95A <small>061923605-0194</small>	Girls' Lavatory by Gym - White 2" Ceramic Wall Tile	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
101619-BS-95B <small>061923605-0195</small>	Custodial Storage - White 2" Ceramic Wall Tile	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-96A <small>061923605-0196</small>	Girls' Lavatory by Gym - Grout for White 2" Ceramic Wall Tile	Gray Non-Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
101619-BS-96B <small>061923605-0197</small>	Custodial Storage - Grout for White 2" Ceramic Wall Tile	Gray Non-Fibrous Homogeneous	3% Cellulose	97% Non-fibrous (Other)	None Detected
101619-BS-97A <small>061923605-0198</small>	Girls' Lavatory by Gym - Adhesive for White 2" Ceramic Wall Tile	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-97B <small>061923605-0199</small>	Custodial Storage - Adhesive for White 2" Ceramic Wall Tile	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-98A <small>061923605-0200</small>	Girls' Lavatory by Gym - White 2" Ceramic Floor Tile	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-98B <small>061923605-0201</small>	Girls' Lavatory by Gym - White 2" Ceramic Floor Tile	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-99A <small>061923605-0202</small>	Girls' Lavatory by Gym - Grout for White 2" Ceramic Floor Tile	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-99B <small>061923605-0203</small>	Girls' Lavatory by Gym - Grout for White 2" Ceramic Floor Tile	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-100A <small>061923605-0204</small>	Girls' Lavatory by Gym - Adhesive for White 2" Ceramic Floor Tile	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-100B <small>061923605-0205</small>	Girls' Lavatory by Gym - Adhesive for White 2" Ceramic Floor Tile	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
101619-BS-101A <small>061923605-0206</small>	Band Room 26 - Tan Pebble Laminate Countertop/Red Adhesive/Caulk	Tan/White/Yellow Non-Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
101619-BS-101B <small>061923605-0207</small>	Band Room 26 - Tan Pebble Laminate Countertop/Red Adhesive/Caulk	Tan/White/Yellow Non-Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
101619-BS-102A <small>061923605-0208</small>	1957 Wing Corridor - 2'x2' Light Textured Suspended Ceiling Tile	Gray Fibrous Homogeneous	50% Cellulose 40% Min. Wool	10% Non-fibrous (Other)	None Detected
101619-BS-102B <small>061923605-0209</small>	1988 Wing Corridor - 2'x2' Light Textured Suspended Ceiling Tile	Gray Fibrous Homogeneous	50% Cellulose 40% Min. Wool	10% Non-fibrous (Other)	None Detected
101619-BS-102C <small>061923605-0210</small>	2000 Wing Corridor - 2'x2' Light Textured Suspended Ceiling Tile	Gray Non-Fibrous Homogeneous	50% Cellulose 40% Min. Wool	10% Non-fibrous (Other)	None Detected

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
101619-BS-103A <small>061923605-0211</small>	1947 Wing Girls' avatory - 2'x4' Pinholes and Fissures Suspended Ceiling Tile (2'x2' Look)	Gray Fibrous Homogeneous	50% Cellulose 40% Min. Wool	10% Non-fibrous (Other)	None Detected
101619-BS-103B <small>061923605-0212</small>	1947 Wing Boys' Lavatory - 2'x4' Pinholes and Fissures Suspended Ceiling Tile (2'x2' Look)	Gray Fibrous Homogeneous	50% Cellulose 40% Min. Wool	10% Non-fibrous (Other)	None Detected
101619-BS-103C <small>061923605-0213</small>	1963 Wing Nurse's Office - 2'x4' Pinholes and Fissures Suspended Ceiling Tile (2'x2' Look)	Gray Fibrous Homogeneous	50% Cellulose 40% Min. Wool	10% Non-fibrous (Other)	None Detected
101619-BS-104A <small>061923605-0214</small>	1963 Wing Storage Room - 2'x4" with Holes Suspended Ceiling Tile	Gray Fibrous Homogeneous	50% Cellulose 40% Min. Wool	10% Non-fibrous (Other)	None Detected
101619-BS-104B <small>061923605-0215</small>	1963 Wing Server/Storage Room - 2'x4" with Holes Suspended Ceiling Tile	Gray Non-Fibrous Homogeneous	50% Cellulose	40% Mica 10% Non-fibrous (Other)	None Detected
101619-BS-105A <small>061923605-0216</small>	1988 Wing Boys' Bathroom - 2'x4' Textured with Holes Suspended Ceiling Tile	Gray Fibrous Homogeneous	50% Cellulose 40% Min. Wool	10% Non-fibrous (Other)	None Detected
101619-BS-105B <small>061923605-0217</small>	1988 Wing Boys' Bathroom - 2'x4' Textured with Holes Suspended Ceiling Tile	Gray Fibrous Homogeneous	50% Cellulose 40% Min. Wool	10% Non-fibrous (Other)	None Detected

Analyst(s)

Daniel Clarke (30)

Erick Rosa (34)

Jimmy Encalada (75)

Omatie Ramrattan-Scarallo (72)

Daniel Clarke, Asbestos Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Carle Place, NY NVLAP Lab Code 101048-10, CA ELAP 2339, NYS ELAP 11469

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Attention: Kathleen Pane
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Phone: (860) 510-9290
Fax:
Received Date: 10/17/2019 9:38 AM
Analysis Date: 10/19/2019
Collected Date: 10/16/2019
Project: Hebron Elementary School, #20160168.W30, 92 Church St, Hebron CT, Throughout

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
101619-BS-02A 061923605-0003	Basement - Hot Water Heater Room - Endcap Sealant	Tan/White Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-05A 061923605-0011	Kitchen - 4" Cove Base - Gray/Tan	Gray/Tan Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-06A 061923605-0013	Kitchen - Tan Adhesive associated with 4" Cove Base - Gray/Tan	Clear Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-07A 061923605-0015	Kitchen - 12"x12" Floor Tile - Tan Mottled	Tan Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-08A 061923605-0017	Kitchen - Yellow Adhesive associated with 12"x12" Floor Tile - Tan Mottled				
Insufficient Material					
101619-BS-11A 061923605-0023	Meeting Room adjacent Conference Room - 4" Cove Base - Light Gray	Gray/White Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-12A 061923605-0025	Meeting Room adjacent Conference Room - Yellow Adhesive associated with 4" Cove Base - Light Gray	Yellow Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-16A 061923605-0034	Boys' Lavatory - White Sink Caulk	White Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-18A 061923605-0038	Boys' Lavatory - Adhesive associated with Dark Gray Pebbled Laminate Countertop	Tan Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-21A 061923605-0044	Boys' Lavatory - Adhesive associated with 4" Blue Ceramic Wall Tile	White Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-29A 061923605-0060	Staff Lavatory - Grout for 2" White Ceramic Wall Tile	White/Beige Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
Could not separate adhesive from sample, composited.					

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Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
101619-BS-37A 061923605-0076	Custodial Closet opposite Main Office - Textured Ceiling Paint	White Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-38A 061923605-0079	Room 6 - Gray Mottled 12"x12" Floor Tile	Beige Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-39A 061923605-0081	Room 6 - Yellow Adhesive/Black Mastic for Gray Mottled 12"x12" Floor Tile	Black/Yellow Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-40A 061923605-0083	Room 6 - Gray 4" Cove Base	Gray/Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-41A 061923605-0085	Room 6 - Adhesive for Gray 4" Cove Base	Yellow Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-42A 061923605-0087	Hallway by Water Fountain - Adhesive for Gray 4" Cove Base	Red Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-43A 061923605-0089	Hallway by Water Fountain - Adhesive for Red 4" Cove Base	White Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-69A 061923605-0143	1957/1963 Transition Hallway - Red Fire Stop Caulk	Red Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-70A 061923605-0145	Room 10 - White Caulk at Counter/CMU Junction	White/Green Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-72A 061923605-0149	Room 14 - Tan Pebble Laminate Countertop/Adhesive (Backsplash)	Brown/Yellow Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-73A 061923605-0151	Girls' Lavatory - Off-White Countertop/Adhesive				
Insufficient Material					

sample could not be separated, composited.

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Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
101619-BS-74A 061923605-0153	Nurse's Office - Coral Countertop/Adhesive				
Insufficient Material					
101619-BS-75A 061923605-0155	Room 10 - Gray Sink Undercoat	Gray Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-76A 061923605-0157	Nurse's Office - Pink Sink Undercoat	Pink Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-84A 061923605-0172	Girls' Lavatory - Adhesive for Tan 4" Ceramic Wall Tile	Yellow Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-85A 061923605-0174	Art Room - Tan 4" Cove Base	Tan Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-86A 061923605-0176	Art Room - Adhesive for Tan 4" Cove Base	Clear Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-87A 061923605-0178	Media Work Room - Red Countertop/Adhesive	Red Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-88A 061923605-0180	Art Room - Black Backsplash Glue				
Insufficient Material					
101619-BS-89A 061923605-0182	Media Work Room - White Sink Undercoat	White Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-90A 061923605-0184	Staff Lavatory (above ceiling) - Pink Fire Stop Caulk	Pink Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-97A 061923605-0198	Girls' Lavatory by Gym - Adhesive for White 2" Ceramic Wall Tile	White/Beige Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
101619-BS-100A 061923605-0204	Girls' Lavatory by Gym - Adhesive for White 2" Ceramic Floor Tile	Tan Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

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Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
101619-BS-101A 061923605-0206	Band Room 26 - Tan Pebble Laminate Countertop/Red Adhesive/Caulk Insufficient Material				

Analyst(s)

Keith McWilliams (30)

Daniel Clarke, Asbestos Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Carle Place, NY

Initial report from: 10/19/2019 09:24:25



1924347

146 Hartford Road, Manchester, CT 06040

Phone (860) 646-2469

Page 1 of _____

ASBESTOS BULK SAMPLE CHAIN OF CUSTODY FORM

Project Name: Hebron Elementary School Project No. 20160168.W30 Date: 10/25/2019

Site Address: 92 Church St. Hebron CT Location: _____ Project Manager: KPanc

Sample ID	Sample Location	Type of Material
* 102519-SV-08A1	1947 - KITCHEN	YELLOW ADHESIVE ASSOCIATED WITH 12" FLOOR TILE - TAN
* 102519-SV-73A1	1963 - GIRLS LAVATORY	OFF-WHITE COUNTERTOP ADHESIVE
* 102519-SV-74A1	1963 - NURSES' OFFICE	CORAL LAMINATE COUNTERTOP & ADHESIVE
* 102519-SV-88A1	1988 - ART ROOM	BLACK BACKSPLASH ADHESIVE
* 102519-SV-101A1	2000 - BAND ROOM 26	TAN PEBBLE LAMINATE COUNTERTOP / RED ADHESIVE / CAULK
102519-SV-65A1	1963 - GIRLS LAVATORY 10/12	WHITE SETTING MATERIAL FOR 4" PINK CERAMIC WALL TILE
-65B1	1963 - GIRLS LAVATORY 14/16	WHITE SETTING MATERIAL FOR 4" PINK CERAMIC WALL TILE
-68A1	1963 - BOYS LAVATORY 10/12	WHITE SETTING MATERIAL FOR 4" BLUE CERAMIC WALL TILE
-68B1	1963 - BOYS LAVATORY 14/16	WHITE SETTING MATERIAL FOR 4" BLUE CERAMIC WALL TILE

Analysis Method: PLM TEM Other _____

Turnaround Time: 48 hr

AS NOTED BELOW

Based on the turnaround time indicated above, analyses are due to Fuss & O'Neill on or before this date: _____ Please call Fuss & O'Neill if analyses will not be completed for requested t/a/t at (860) 646-2469.

Email Results to: LabResults@fando.com and KPanc@fando.com

Do Not Mail Hard Copy Report

Total # of Samples: 9

Special Instructions: Stop analysis on first positive sample in each homogeneous set of samples unless otherwise noted. Do not layer samples unless indicated. Do Not Point Count. If NOB group sample results are 0% - < 1% by PLM, analyze only "A" group sample above by TEM NOB, per group, unless you are told otherwise. * TEM NOB ONLY in 40

Samples collected by: SVanderveer Date: 10/25/2019 Time: _____

Samples Sent by: SVanderveer Date: 10/25/2019 Time: _____

Samples Received by: UNIQUE MCKAY Date: 10/28/19 Time: 10:18 AM.

Shipped To: EMSL Other _____

Method of Shipment: FedEx Lab Drop Off Other _____

19 OCT 28 AM 10:18
ANALYTICAL
LABORATORY
SAMPLE PLACE, N.H.

10/28/19
10-29-19



EMSL Analytical, Inc.

528 Mineola Avenue Carle Place, NY 11514

Tel/Fax: (516) 997-7251 / (516) 997-7528

<http://www.EMSL.com> / carleplacelab@emsl.com


EMSL Order: 061924347
Customer ID: ENVI54
Customer PO: 20160168.W30
Project ID:

Attention: Kathleen Pane Fuss & O'Neill, Inc. 146 Hartford Road Manchester, CT 06040	Phone: (860) 510-9290 Fax: Received Date: 10/28/2019 10:18 AM Analysis Date: 10/28/2019 Collected Date: 10/25/2019
Project: Hebron Elementary School, 92 Church St, Hebron CT, Project #20160168.W30	

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

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
102519-SV-65A1 <small>061924347-0006</small>	1963 - Girls Lavatory 10/12 - White Setting Material for 4" Pink Ceramic Wall Tile	White Non-Fibrous Homogeneous		15% Quartz 75% Ca Carbonate 10% Non-fibrous (Other)	None Detected
<i>Ceramic Tile not analyzed.</i>					
102519-SV-65B1 <small>061924347-0007</small>	1963 - Girls Lavatory 14/16 - White Setting Material for 4" Pink Ceramic Wall Tile	White Non-Fibrous Homogeneous		10% Quartz 75% Ca Carbonate 15% Non-fibrous (Other)	None Detected
<i>Ceramic Tile not analyzed.</i>					
102519-SV-68A1 <small>061924347-0008</small>	1963 - Boys Lavatory 10/12 - White Setting Material for 4" Blue Ceramic Wall Tile	White Non-Fibrous Homogeneous		25% Quartz 60% Ca Carbonate 15% Non-fibrous (Other)	None Detected
<i>Ceramic Tile not analyzed.</i>					
102519-SV-68B1 <small>061924347-0009</small>	1963 - Boys Lavatory 14/16 - White Setting Material for 4" Blue Ceramic Wall Tile	White Non-Fibrous Homogeneous		20% Quartz 65% Ca Carbonate 15% Non-fibrous (Other)	None Detected
<i>Ceramic Tile not analyzed.</i>					

Analyst(s) _____
Steve Jusczyk (4)


Daniel Clarke, Asbestos Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Carle Place, NY NVLAP Lab Code 101048-10, CA ELAP 2339, NYS ELAP 11469

Initial report from: 10/30/2019 09:03:09



EMSL Analytical, Inc.

528 Mineola Avenue Carle Place, NY 11514
Tel/Fax: (516) 997-7251 / (516) 997-7528
<http://www.EMSL.com> / carleplacelab@emsl.com

EMSL Order: 061924347
Customer ID: ENVI54
Customer PO: 20160168.W30
Project ID:

Attention: Kathleen Pane
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040
Phone: (860) 510-9290
Fax:
Received Date: 10/28/2019 10:18 AM
Analysis Date: 10/29/2019
Collected Date: 10/25/2019
Project: Hebron Elementary School, 92 Church St, Hebron CT, Project #20160168.W30

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
102519-SV-08A1 061924347-0001	1947 - Kitchen - Yellow Adhesive associated with 12" Floor Tile - Tan	Yellow Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
Only Adhesive was analyzed. Floor Tile not analyzed.					
102519-SV-73A1 061924347-0002	1963 - Girls Lavatory - Off-White Countertop Adhesive	Yellow/Clear Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
Only Adhesive was analyzed. Countertop not analyzed.					
102519-SV-74A1 061924347-0003	1963 - Nurses Office - Coral Laminate Countertop & Adhesive	Brown/Red/Yellow Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
Composite of inseparable countertop and adhesive.					
102519-SV-88A1 061924347-0004	1988 - Art Room - Black Backsplash Adhesive	White/Black Non-Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
Composite of black and white layers.					
102519-SV-101A1-C 061924347-0005	2000 - Band Room 26 - Tan Pebble Laminate Countertop/ Red Adhesive/ Caulk	Brown/Red/Purple Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
Composite of inseparable countertop and adhesive.					
102519-SV-101A1-C 061924347-0005A	2000 - Band Room 26 - Tan Pebble Laminate Countertop/ Red Adhesive/ Caulk	White Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)

Keith McWilliams (6)

Daniel Clarke, Asbestos Laboratory Manager
or other approved signatory

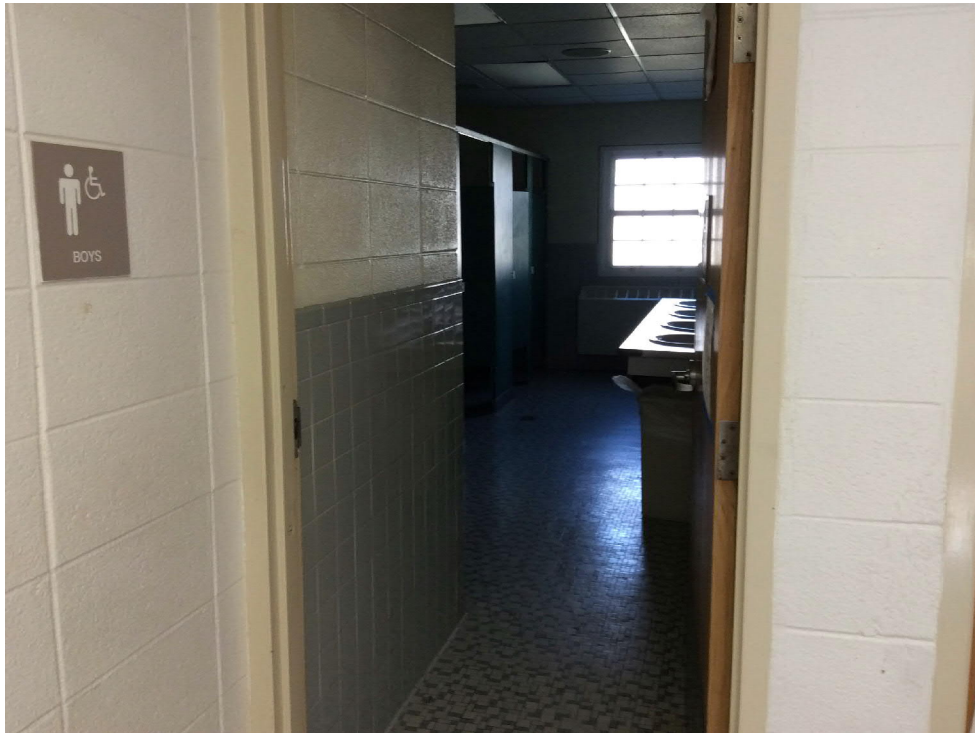
This laboratory is not responsible for % asbestos in total sample when the residue only is submitted for analysis. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by EMSL Analytical, Inc. Carle Place, NY

Initial report from: 10/30/2019 09:03:07

Appendix D

Site Photographs



Lead Containing Blue Ceramic Wall Tile – 1963 Wing Boys' Lavatory



Lead Containing Pink Ceramic Wall Tile – 1963 Wing Girls' Lavatory



Lead containing black ceramic cove base tiles



Asbestos-containing white caulking at sink unit counter in Boys' Lavatory



Assumed asbestos-containing air cell at concrete floor plumbing penetration



Assumed air cell pipe insulation at concrete floor pipe penetration (close up)

Appendix E

XRF Lead Determination Field Data Sheets

XRF LEAD DETERMINATION FIELD DATA SHEET

 Inspector Name: BEN SILVERMAN Inspector License #: _____

 Date: 10/14/19 XRF Model: RMD HEURESIS Serial: 2171

 Project Name: HEBRON ES Project Number: 20160168.1W30

 Address: 92 CHURCH ST, HEBRON CT Project PM: KPANE
XRF Calibration Check-RMD (0.7 to 1.3 mg/cm² inclusive)

	Hour	First Reading	Second Reading	Third Reading	Average
First Check	0830	1.0	1.0	1.0	1.0
Second Check	1030	1.2	1.1	1.1	1.13
Third Check					
Fourth Check					

Side	Surface/Component	Substrate/Color	XRF Reading	Positive (✓)	Comments/Notes
	WALL	CMU/PEACH	-0.3		1988 LIBRARY WKRm
	WALL	CMU/WH	-0.1		LIBRARY
	WALL	S/PEACH	0.2		SG19
	WALL	CMU/WH	-0.2		ART ROOM
	CEILING	S/WH	0.2		STAFF LAV
	WALL	CERAMIC/TAN	-0.2		┆
	WALL	CERAMIC/TAN	0.1		BOYS LAV
	WALL	CMU/WH	-0.1		CORRIDOR
	CEILING/CHASE	S/WH	0.2		┆ CORR @ 47/53
	WALL	S/WH	0.1		1957 CLASSRM 7
	WALL	P/WH	0.2		┆
	WALL	P/SEAFOAM	0.0		CLASSRM 5
	WALL	S/SEAFOAM	0.5		┆
	WALL	CMU/WH	-0.1		1963 CUSTODIAL
	WALL	CERAMIC/PINK	2.6	✓	┆ GIRLS LAV
	WALL	CMU/CREAM	0.0		┆
	WALL	CMU/CREAM	-0.2		┆

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

Side	Surface/Component	Substrate/Color	XRF Reading	Positive (✓)	Comments/Notes
	WALL	4" CERAMIC/BL	3.6	✓	1963 LAV @ 10/12
	WALL	CMU/BL	0.0		
	WALL	4" CERAMIC/PWK	3.0	✓	
	WALL @ SINK	CMU/WH	-0.2		2000 CLASSRM 17
	WALL @ SINK	CMU/WH	-0.1		CLASSRM 20
	CEILING	S/WH	0.1		CORR @ 19/20
	WALL	2" CERAMIC/WH	0.1		MENS LAV @ Gym
	WALL	CMU/WH	0.5		
	CEILING/CHASE	S/WH	0.2		
	WALL	2" CERAMIC/WH	-0.1		GIRLS LAV @ Gym
	WALL	CMU/WH	0.1		
	WALL	CMU/WH	-0.2		1947 KITCHEN
	WALL	B/WH	0.0		BOYS LAV
	WALL	B/OFFWH	0.1		
	4" WALL TILE	CERAMIC/BLUE	0.0		
	WALL	B/OFFWH	0.0		GIRLS LAV
	4" tile COVEBASE	CERAMIC/BLK	15.6	✓	
	WALL	B/WH	-0.1		CORRIDOR
	WALL @ SINK	S/WH	0.1		CLASSRM 3

* Substrate Type: Metal = M, Wood = W, Plaster = P, Sheetrock = S, Concrete = C, Brick = B
 N/A: Not Accessible; N/C: Not Coated; COV: Covered; VR - Vinyl Replacement
 Q:\invirosience\Admin\FORMS\Lead\XRF\HQ\XRF Lead Determination Field Data Sheets_20180522.docx



XRF LEAD DETERMINATION FIELD DATA SHEET

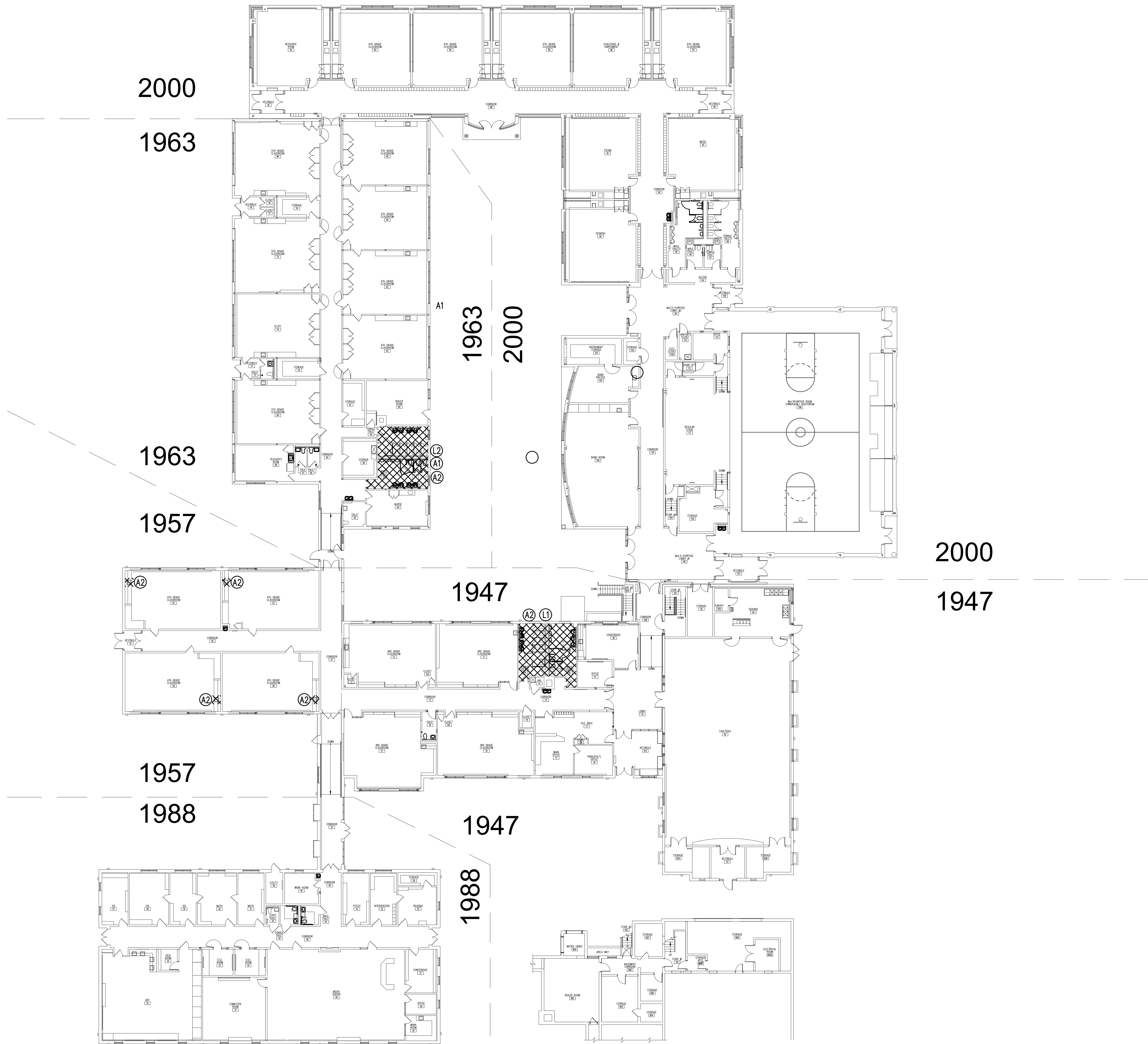
Inspector Name: STACY VANDERVEER Inspector License #:
Date: 10/15/19 XRF Model: RMD HEURESIS Serial: 2171
Project Name: HEBRON ES Project Number: 20160168.W30
Address: 92 CHURCH ST, HEBRON CT Project PM: KPANE

XRF Calibration Check-RMD (0.7 to 1.3 mg/cm² inclusive)

Table with 5 columns: Hour, First Reading, Second Reading, Third Reading, Average. Rows include First Check, Second Check, Third Check, and Fourth Check.

Main data table with 6 columns: Side, Surface/Component, Substrate/Color, XRF Reading, Positive (v), Comments/Notes. Includes entries for CEILING BEAM and VERT. STRUCTURAL BEAM.

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



GENERAL NOTES

1. THE HAZARDOUS MATERIALS ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFICATION OF ALL EXISTING CONDITIONS AND QUANTITIES, AND FOR NOTIFYING THE CONSULTANT OF ANY DISCREPANCIES PRIOR TO FINALIZING BID
2. RENOVATION AREAS REPRESENTED ON THIS DRAWING ARE TO BETTER AID IN THE IDENTIFICATION OF AREAS REQUIRING ABATEMENT. THE CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS FOR RENOVATION INFORMATION.
3. REFER TO THE HAZARDOUS MATERIALS ABATEMENT SPECIFICATIONS 028200 AND 028319 FOR FURTHER INFORMATION REGARDING ASBESTOS ABATEMENT AND LEAD PAINT AWARENESS. PROPERLY MANAGE LEAD CERAMIC WALL TILES AND LEAD IN SOLDER
4. SHADING OR HATCHING REPRESENTED ON THIS DRAWING IS TO BETTER AID IN THE IDENTIFICATION OF AREAS REQUIRING ABATEMENT. THE HAZARDOUS MATERIALS ABATEMENT CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, LOCATIONS AND/OR QUANTITIES PRIOR TO FINALIZING BID.

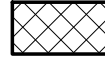

ASBESTOS ABATEMENT NOTES

- (A1) THE HAZARDOUS MATERIALS ABATEMENT CONTRACTOR SHALL REMOVE AND DISPOSE OF ASBESTOS CONTAINING SINK CAULK AS ACM.
- (A2) THE HAZARDOUS MATERIALS ABATEMENT CONTRACTOR SHALL REMOVE AND DISPOSE OF ASBESTOS CONTAINING PIPE INSULATION AS ACM.

LEAD ABATEMENT NOTES

- (L1) THE HAZARDOUS MATERIALS ABATEMENT CONTRACTOR SHALL REMOVE AND DISPOSE OF CERAMIC TILE COVE BASE AS RCRA LEAD WASTE.
- (L2) THE HAZARDOUS MATERIALS ABATEMENT CONTRACTOR SHALL REMOVE AND DISPOSE OF CERAMIC WALL TILE AS RCRA LEAD WASTE.

LEGEND

-  HAZARDOUS ABATEMENT WORK AREA
-  KEYNOTE

Revision	Description	Date	Revised By