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ASBESTOS, LEAD AND HAZARDOUS BUILDING MATERIALS SURVEY

50 CHILD LANE WARWICK, RHODE ISLAND

November 2021
File No. 34957.00



PREPARED FOR:
City of Warwick

GZA GeoEnvironmental, Inc.

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November 17, 2021
File No. 34957.00

Mr. Thomas J. Kravitz
City Planning Director
Warwick City Hall
3275 Post Road
Warwick, Rhode Island 02886

Re: Pre-Demolition Hazardous Building Materials Assessment Report
50 Child Lane
Warwick, Rhode Island

Dear Mr. Kravitz:

GZA GeoEnvironmental, Inc. ("GZA") is pleased to submit this *Asbestos and Hazardous Building Materials Assessment Report* to the City of Warwick (the "Client") for the above-listed property ("the Site"). Our work was conducted in accordance with our executed proposal dated July 27, 2021. This report and our opinions and recommendations are subject to the Limitations provided below and in Attachment A.

This report presents the results of an asbestos and hazardous building materials assessment conducted by GZA GeoEnvironmental, Inc. (GZA) for the City of Warwick of an existing one story former elementary school property located at 50 Child Lane in Warwick, Rhode Island (the Site). We understand the Client's intent at this time is to demolish the structure. The purpose of the assessment was to provide information on the quantity and location of hazardous building materials.


On October 12, 2021, a hazardous building materials assessment was conducted by Mr. Erik Beloff (License # AI00938) in accordance with RIDOH regulations, Rules and Regulations for Asbestos Control (216-RICR-50-15-1). The recommendations provided are based on our visual observations of the material, analytical results, our understanding of the applicable regulations, and experience with management of hazardous building materials.


Thank you for this opportunity to be of service. Please contact Erik at 401-421-2723 or erik.beloff@gza.com with any questions you may have pertaining to the information in this report.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.


Erik M. Beloff
Project Manager
RIDOH-Licensed Asbestos Inspector


Jeffrey D. Rowell, P.E.^{NH}
Consultant/Reviewer


Edward A. Summerly, P.G.^{NY, KY}
District Office Manager / Principal



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1.0 INTRODUCTION AND PURPOSE

1.1 INTRODUCTION

This report presents the findings of a Hazardous Building Materials Survey conducted by GZA GeoEnvironmental, Inc. (GZA) for the City of Warwick (Client) at the property identified as 50 Child Lane (Site) located in Warwick, Rhode Island. The initial site visit portion of the survey was conducted on October 12, 2021, in general accordance with GZA's Proposal dated July 27, 2021. This report is subject to the *Limitations* in **Appendix A**.

1.2 PROJECT OBJECTIVE

GZA understands that current redevelopment plans for the property include the demolition of the existing Site structure. The objective of our work was to perform a walkthrough of the accessible portions of the above referenced building to identify and evaluate the presence and condition of suspect asbestos-containing material (ACM), poly-chlorinated biphenyls (PCB), lead-containing paint (LCP), and other visually observed universal wastes and hazardous building materials. The work included the collection of bulk samples of observed representative suspect ACMs, PCBs, and lead-containing paint materials and the quantification of identified ACMs and hazardous materials.

1.3 PROJECT STRATEGY

This assessment was limited to materials that were visible and accessible during the survey of the building on the project site. Efforts were made to access the interiors of pipe chases and wall cavities by using available access hatches, but it should be noted that certain interstitial building voids and spaces could not be accessed without disassembly of the building or use of destructive methods. Charged electrical systems and energized mechanical and pneumatic equipment were not sampled as part of this survey. GZA did not dismantle mechanical equipment within the building. Inaccessible areas and areas beyond the Scope of Work, including boilers, mechanical equipment and HVAC equipment, were not sampled during the assessment and the materials comprising these inaccessible or beyond scope systems should be assumed to be ACM for the purposes of this report. Although reasonable effort was made to survey accessible suspect materials, additional suspect, but un-sampled materials, could be located in walls, voids or in other concealed areas. Furthermore, it is assumed that no active effort, intentional or otherwise, was made by others to cosmetically hide potentially salient features or conditions from GZA.

2.0 SITE DESCRIPTION

The Site covers approximately 10.38 acres and is improved with one structure (Former John Wickes Elementary School), paved parking and limited landscaped areas. The approximately 42,276-square-foot school building located at 50 Child Lane, Warwick, Rhode Island is a one-story masonry-block and brick structure erected on a concrete slab-on-grade floor and associated foundation. Records indicate the original construction was in 1954. At the time of the assessment, the building was unoccupied. The building's roofing systems consisted of one layer of EPDM rubber membrane over a poly-isocyanurate insulation layer on-top of a built-up tar & gravel system over a wood and metal deck substrate. Exterior walls of the building consist of brick and concrete masonry units (CMU). Interior walls consist of ceramic tile, ceramic block, gypsum wallboard, brick or CMU block. The flooring finishes consist of bare concrete, ceramic tile and vinyl tile. The ceilings throughout the majority of the classrooms had a suspended ceiling tile system obscuring the underlayment for the roof substrate above. Hallway ceilings were finished wallboard with plaster. The building's domestic hot water and heat are supplied by natural gas.



3.0 SCOPE OF SERVICES

The scope of work involved visually identifying and classifying conditions within the interior and exterior areas, collecting representative samples of suspect ACM/HBM for analysis, and integrating and reporting our findings in a written report. GZA observed building structural components; utility systems (electrical, mechanical, and plumbing); interior spaces and building contents; and the suspect materials comprising or associated with the building exteriors.

No prior asbestos or hazardous material inspection reports regarding the site were provided to GZA. Some past AHERA inspection records were provided to GZA.

4.0 INVESTIGATION PROCEDURES

Results of the investigation are provided below.

4.1 ASBESTOS INVESTIGATION

The pre-demolition level asbestos assessment and sampling conducted at the site on October 12, 2021 was performed by Mr. Erik M. Beloff and Mr. Ben Ramos, Rhode Island Department of Health certified Asbestos Inspector's (Certificate #AI00938 & #AI01136).

4.1.1 Asbestos Sampling

The suspect ACM sampling was conducted throughout the interior and exterior of the building scheduled to be impacted by the proposed demolition work. An aerial site plan showing the location of the structures is attached as **Figure 1**. Accessible interior and exterior building components were visually assessed and homogeneous areas of suspect ACMs were identified and documented. Procedures for locating and identifying suspect ACM were based on guidelines published by the United States Environmental Protection Agency (USEPA).¹ A homogeneous area consists of building materials that appear similar throughout in terms of color, texture and date of application. Building materials identified as concrete, glass, wood, masonry, metal or rubber were not considered suspect ACM.

A physical assessment of each homogeneous area of suspect ACM was conducted to assess the friability and condition of the materials. A friable material is defined by the USEPA as a material which can be crumbled, pulverized or reduced to powder by hand pressure when dry. Friability was assessed by physically touching suspect materials.

Based on results of the visual observation, bulk samples of suspect ACM were collected in general accordance with the sampling protocols outlined in USEPA Regulation 40 CFR 763 Asbestos Hazard Emergency Response Act and the Rhode Island Department of Health (RIDOH) Rules and Regulations for Asbestos Control (216-RICR-50-15-1). It was assumed that discrete suspect ACM were sufficiently uniform in composition to permit random samples to be collected of suspect materials in each homogeneous area. GZA collected bulk samples wearing appropriate Personal Protection Equipment and using wet methods as applicable to reduce the potential for fiber release. Samples were placed in individual re-sealable plastic bags, wet wiped of visible debris, labeled with unique sample numbers using an indelible marker, recorded and dispatched to an accredited laboratory for analysis following chain-of-custody protocols. In total, 99 bulk samples were collected from 53 areas of suspect ACM. A summary of suspect ACM samples collected during the survey is presented in **Table 1**.

¹ Environmental Protection Agency, Guidelines for Controlling Asbestos-Containing Materials in Buildings, Office of Pesticides and Toxic Substances, EPA Report Number 560/5-85-024, June 1985.



4.1.2 Sample Analysis

ProScience Analytical Services Inc. (ProScience), located at 22 Cummings Park, Woburn, Massachusetts analyzed the bulk samples using polarized light microscopy (PLM) with dispersion staining techniques per USEPA methodology (40 CFR 763, Subpart F). The percentage of asbestos, where applicable, was quantified by microscopic visual estimation. ProScience is an approved laboratory by the RIDOH (Lab ID No. PLM00093) and is accredited under the National Voluntary Laboratory Accreditation Program (NVLAP Accreditation No. 200090-0). A copy of the laboratory's accreditations is included as **Appendix B**. The laboratory was instructed to analyze samples from each homogeneous area until the first sample containing asbestos was identified using the positive stop procedure.

4.1.3 Asbestos Analytical Results

Laboratory analysis identified the presence of ACM in the following Site materials sampled:

- 9"x9" blue floor tile and associated black mastic in the all-purpose room
- 9"x9" green tile and associated mastic on the staff-room kitchen counters
- Staff-room kitchen sink, black underside anti-condensate coating
- Exterior courtyard, white window glazing
- White plaster ceilings in hallways

A summary of ACM and non-ACM identified by sample identification, material type, sample location, and asbestos content of identified ACM is presented in **Table 1**. A summary of confirmed ACMs is presented in **Table 2**. The laboratory analytical reports are included as **Appendix C**.

4.2 LEAD PAINT ASSESSMENT

The following subsections summarize GZA's approach to, and findings of, our lead containing paint assessment of the subject property.

4.2.1 Lead-Containing Paint Survey

On October 12, 2021, John Eastman with Environmental Lead Detection, Inc., a Rhode Island Certified Lead Inspector (#00004), conducted a Lead Paint Inspection. The survey included testing painted surfaces for lead-containing paint (LCP) using x-ray fluorescence (XRF). Painted surfaces throughout the interior and exterior of the structure were randomly selected for lead paint analysis using XRF. Typical painted areas tested were walls, doors, door trim, windows, baseboards, etc. for lead paint using XRF. Positive XRF readings for lead-based paint were identified on interior concrete windowsills, metal columns, wood door casings, wood windowsills and wood window casings. Positive XRF readings for lead-based paint were also identified on exterior metal columns, metal flagpole, metal door lintels, wood window casings, wood door panels, wood upper trim, wood window casings, wood window sashes and wood windowsills. Positive XRF readings for lead-containing paints (LCP) were identified on slate chalkboards and vinyl baseboards.

The lead paint inspection included the performance of an Occupational Health and Safety Administration (OSHA) pre-demolition lead paint survey at the Site property. The OSHA survey was performed in compliance with the United States Department of Labor OSHA Lead Exposure in Construction Standard (29 CFR 1926.62), and USEPA Hazardous Waste Disposal Regulations (40 CFR Parts 260 through 271). The assessment was performed by screening representative accessible interior and exterior painted surfaces, observed in and on the building, and analyzing the samples to provide an indication of the presence of lead that may potentially create a lead hazard to workers in the course of the demolition of the building. A copy of the lead-based paint report is included as **Appendix D**.



4.3 UNIVERSAL WASTES INVESTIGATION

The Universal Wastes investigation was completed at the site by GZA personnel, Mr. Erik M. Beloff.

4.3.1 Universal Wastes Assessment

During the assessment, GZA visually identified several building construction materials suspected of potentially containing PCBs. Procedures for locating and identifying materials suspected of containing PCBs were based on guidelines published by the USEPA. The assessment was performed by collecting bulk samples from representative accessible suspect sealants/caulks/glazings observed in and on the buildings and analyzing the samples to provide an indication of the presence of PCBs in the materials that were present that potentially could create a hazard to workers during the course of the demolition of the building. Samples were placed in individual re-sealable plastic bags, wet wiped of visible debris, labeled with unique sample numbers using an indelible marker recorded and dispatched to an accredited laboratory for analysis following chain-of-custody protocol. In total, eight samples were collected and submitted for PCB analysis.

ESS analyzed the bulk samples for PCB content using USEPA Method 8082, Test Methods for Evaluating Solid Waste. ESS is accredited for PCB in solid waste analysis, ELAP Accreditation No. 2864.01.

As indicated in the attached laboratory analytical results, the PCB concentrations in the submitted glazing, caulk and sealant material samples were all reported below the method reporting limit (RL) except for three samples. PCBs were detected above the method reporting limit in: 1) interior window sealant; 2) exterior joint caulk between brick; and 3) exterior classroom window glazing samples. Aroclor 1254 was detected in sample PCB-02 at 1.7 mg/kg, PCB-05 at 1.0 mg/kg and PCB-06 at 0.6 mg/kg, all slightly above the method reporting limit of 0.2 mg/kg. The detections were well below the 50 parts per million (ppm) threshold for PCB Bulk Product Waste. PCB results are provided in **Table 3** and a copy of the laboratory analytical reports are provided in **Appendix C**.

GZA also conducted a visual survey of Universal Wastes (UW), potential PCB-containing components and miscellaneous stored chemicals, petroleum products, and gases. UW, defined in 40 CFR Part 273 by the USEPA, includes hazardous wastes that are pesticides or electrical system components such as batteries, thermostats, and mercury-containing lamps. Varying types of other potentially hazardous materials present requiring proper handling and disposal prior to demolition were identified in the site building. Our inventory of hazardous materials was based on a visual assessment only; no additional sampling or characterization of UWs was performed. A detailed inventory, which includes the location and quantity of the identified hazardous materials, is presented in **Table 4**. The materials identified in **Table 4** must be managed and disposed of in accordance with current state and federal waste management regulations.

5.0 **REGULATORY OVERVIEW**

5.1 ASBESTOS

USEPA regulation 40 CFR 61, Subpart M, **National Emission Standards for Hazardous Air Pollutants (NESHAPS)** and the RIDOH regulate asbestos fiber emissions during renovation or demolition activities and asbestos waste disposal practices at both publicly and privately owned and operated facilities in the State. These regulations require the identification and classification of existing building materials prior to demolition or renovation activity. Under NESHAP and Rhode Island regulations, asbestos-containing building materials are defined as materials containing greater than 1% of asbestos content and are classified as either friable, Category I non-friable, or Category II non-friable ACM. Friable materials are those that, when dry, may be crumbled, pulverized or reduced to powder by hand pressure. Category I non-friable ACM includes packings, gaskets, resilient floor coverings and asphalt roofing products containing more than 1% asbestos. Category II non-friable ACM are any materials non-friable other than Category I materials that contain more than 1% asbestos.



Friable ACM, along with Category I and Category II non-friable ACM which is in poor condition and has become friable or which will be subjected to drilling, sanding, grinding, cutting or abrading and which could be crushed or pulverized during anticipated renovation or demolition activities are considered regulated ACM (RACM).

RACM must be removed prior to any renovation or demolition activities which will disturb the materials. The owner or operator of a facility must provide the RIDOH with written notification of planned removal activities, including an asbestos abatement plan prepared by a licensed individual, at least 10 working days prior to the commencement of asbestos abatement activities. Removal of RACM must be conducted by a RIDOH-licensed asbestos abatement contractor. Third-party area air clearance testing must be performed at the conclusion of the abatement activities and prior to re-occupancy of the removal areas to determine if the air quality is suitable. Third-party post-abatement visual clearance confirmation must be performed at the conclusion of the abatement activities for buildings that are not planned to be re-occupied.

The OSHA Asbestos standard for construction (29 CFR 1926.1101) and general industry (29 CFR 1910.1001) regulates workplace exposure to asbestos. The OSHA standards require that employee exposure to airborne asbestos fibers be maintained below 0.1 asbestos fibers per cubic centimeter of air as an eight-hour time weighted average. The OSHA standards classify construction and maintenance activities which could disturb ACM, and specifies work practices and precautions which employers must follow when engaging in each class of regulated work. States which administer their own federally-approved State OSHA programs may require additional precautions.

5.2 LEAD-CONTAINING PAINT

Lead is regulated by the USEPA, the State of Rhode Island, and OSHA. The USEPA and Rhode Island regulate the use, removal and disposal of LCP and OSHA regulates lead exposure to workers. The USEPA and Rhode Island define lead-based paint as paint, varnish, stain, or other applied coating that contains lead equal to or greater than 1.0 milligrams per square centimeter, 5,000 milligrams per kilogram, or 0.5% by dry weight as determined by laboratory analysis. OSHA defines lead-containing paint as a paint which contains lead, regardless of the concentration. For the purpose of the OSHA lead standard, lead includes metallic lead, all inorganic lead compounds, and organic lead soaps.

The Resource Conservation and Recovery Act (RCRA) gave the USEPA authority to regulate the waste status of demolition or renovation debris, including lead-containing materials. Specific notification and testing requirements must be addressed prior to transporting, treating, storing, or disposing of hazardous wastes. Lead-containing wastes are considered hazardous waste under RCRA if Toxicity Characteristic Leaching Procedure results for lead exceed 5 milligrams per liter.

Detectable lead concentrations may constitute a lead dust hazard during renovation/demolition activities. Personnel performing renovation/demolition activities that may disturb painted components with concentrations of lead above the designated analytical detection limit should comply with all current OSHA regulations in order to minimize employee exposure. Currently, any proposed renovation/demolition is subject to the OSHA regulations (29 CFR 1926.62 – Lead Exposure in Construction). The OSHA regulation defines specific training requirements, engineering controls and working practices for construction personnel subject to this standard. Occupational exposure to lead occurring in the course of construction work, including maintenance activities, painting, alteration and repairs is subject to the OSHA “Interim” Lead Exposure in Construction standard.

Construction work covered by 29 CFR 1926.62 includes any repair or renovation activities or other activities that disturb in-place lead-containing materials, but does not include routine cleaning and repainting where there is insignificant damage, wear, or corrosion of existing lead-containing coatings or substrates. Employers must assure that no employee will be exposed to lead at concentrations greater than 50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) averaged over an eight-hour period without adequate protection. The OSHA Standard also establishes an action level of 30 $\mu\text{g}/\text{m}^3$ which if exceeded triggers the requirement for medical monitoring.



The above overview is not intended to be inclusive of all potentially pertinent regulatory information. The relevant USEPA, Rhode Island and OSHA standards should be consulted prior to undertaking activities involving the demolition, renovation, or maintenance of surfaces coated with lead paints.

5.3 UNIVERSAL WASTES AND PCB-CONTAINING MATERIALS

Universal wastes are regulated by the USEPA, the State of Rhode Island, and OSHA. The USEPA and the State of Rhode Island regulate the use, removal and disposal of universal wastes, and OSHA regulates exposure to workers. Universal wastes must be managed and disposed of in accordance with current State and federal hazardous waste management regulations.

The USEPA and the State of Rhode Island regulate the disposal of material containing PCBs. The Toxic Substances Control Act and the implementing regulations found at 40 CFR 761 require that caulks, sealants, and glazing containing concentrations of PCBs of 50 parts per million (ppm) or greater must be disposed of as PCB bulk product waste in a permitted solid waste landfill or by completing a risk-based disposal process. Under USEPA's 2012 reinterpretation of 40 CFR 761, building materials impacted by migrating PCBs from adjacent PCB-containing caulks may be regulated under 40 CFR 761.62 as bulk product waste, provided the impacted building material is removed at the same time as the source material and managed appropriately.

Certain materials that contain PCB concentrations between 1 ppm up to 50 ppm may be categorized as Excluded PCB Products (see 40 CFR 761.3), provided they meet certain specific criteria. Any waste materials containing PCBs at any concentration have potential disposal considerations and require disposal at facilities that are permitted to accept such PCB-containing wastes.

6.0 CONCLUSIONS AND RECOMENDATIONS

Results of our survey identified the presence of Asbestos (ACM) and Hazardous Building Materials (HBMs) at the Site building as detailed above and in Tables 1 through 4. Based on these results, the following recommendations are made:

- Laboratory analysis of the samples collected during the limited asbestos survey identified the presence of asbestos in eight of the sampled building materials:
 - 9"x9" blue tile and associated black mastic in the all-purpose room closet
 - 9"x9" green counter tile and associated black mastic and sink anti-condensate in the staff kitchen
 - Exterior courtyard white window glazing
 - White hallway ceiling plaster
 - Chalkboard glue daubs in the classrooms indicate the presence of asbestos;
- Prior to conducting renovation/demolition activities impacting confirmed or assumed ACM, retain a State-licensed asbestos abatement contractor to remove ACMs;
- Notify contractors of the potential asbestos, lead and PCB hazards per OSHA's Hazard Communication rule (29 CFR 1910.1200);
- Should other suspect asbestos-containing materials be discovered during demolition activities, work should immediately stop and the material should be characterized/evaluated for asbestos content or assumed positive and abated accordingly;
- Prior to conducting demolition activities impacting surfaces coated with lead paints, retain a State-licensed lead abatement contractor to abate lead-impacted materials in accordance with all USEPA, Rhode Island and OSHA standards;
- Prior to conducting demolition activities impacting confirmed or assumed hazardous materials, retain a qualified contractor to remove hazardous materials; and



- Universal wastes may either be removed and recycled, or disposed of in accordance with applicable state and federal regulations before renovations. If scheduled to be impacted and prior to the demolition work, the heating, ventilation and air conditioning units should be assessed to determine if they contain Freon gas and, if present, the gas should be removed and collected from the unit using USEPA-approved equipment and procedures, and in accordance with the USEPA regulations under the Clean Air Act.



TABLES

TABLE 1
SUSPECT ACM SAMPLE INVENTORY
JOHN WICKES ELEMENTARY
50 CHILD LANE
Warwick, Rhode Island

SAMPLE NUMBER	MATERIAL DESCRIPTION	MATERIAL LOCATION	ANALYTICAL RESULTS
001A	1'x1' Tile, White	Main entrance, hallway, ceiling, above drop ceiling	NAD
001B	1'x1' Tile, White	NE-SW hallway, ceiling, above drop ceiling	NAD
002A	Glue dabs, Brown	Main entrance, ceiling, associated w/ 001A	NAD
002B	Glue dabs, Brown	NE-SW hallway, ceiling, associated w/ 001B	NAD
003A	2'x4' Tile, White	Main entrance, hallway, ceiling	NAD
003B	2'x4' Tile, White	NW-SE hallway, ceiling	NAD
004A	12"x12" Tile, Speckled Gray	Main entrance, hallway, floor	NAD
004B	12"x12" Tile, Speckled Gray	NE-SW hallway, floor	NAD
005A	Mastic, Yellow	Main entrance, hallway, floor, assoc. w/ 004A	NAD
005B	Mastic, Yellow	Main entrance, hallway, floor, assoc. w/ 004B	NAD
006A	3" Cove Base, Gray	Main entrance, hallway, wall	NAD
006B	3" Cove Base, Gray	NE-SW hallway, wall	NAD
007A	Mastic, Tan	Main entrance, hallway, wall, assoc. w/ 006A	NAD
007B	Mastic, Tan	NE-SW hallway, wall, assoc. w/ 006B	NAD
008A	3" Cove Base, Dark Brown	All Purpose Rm, wall	NAD
008B	3" Cove Base, Dark Brown	All Purpose Rm, wall	NAD
009A	Mastic, Tan	All Purpose Rm, wall, assoc. w/ 008A	NAD
009B	Mastic, Tan	All Purpose Rm, wall, assoc. w/ 008B	NAD
010A	9"x9" Tile, Blue	All Purpose Rm, closet, floor	5% Chrysotile
010B	9"x9" Tile, Blue	All Purpose Rm, closet, floor	NA/PS
011A	Mastic, Black	All Purpose Rm, closet, floor, assoc., w/ 010A	3% Chrysotile
011B	Mastic, Black	All Purpose Rm, closet, floor, assoc., w/ 010B	NA/PS
012A	9"x9" Tile, Green	Kitchen, counter	3% Chrysotile
012B	9"x9" Tile, Green	Kitchen, counter	NA/PS
013A	Mastic, Black	Kitchen, counter, assoc., w/ 012A	2% Chrysotile
013B	Mastic, Black	Kitchen, counter, assoc., w/ 012B	NA/PS
014A	Anti-condensate, Black	Kitchen, sink, underside	5% Chrysotile
014B	Anti-condensate, Black	Kitchen, sink, underside	NA/PS
015A	Glazing, White	Ext., courtyard windows	2% Chrysotile
015B	Glazing, White	Ext., courtyard windows	NA/PS
016A	Plaster, White	NW-SE hallway, ceiling	3% Chrysotile
016B	Plaster, White	NW-SE hallway, ceiling	NA/PS
017A	Plaster, White	Rm 6, entryway, wall	NAD
017B	Plaster, White	Rm 6, entryway, wall	NAD
018A	Wallboard, White	Rm 6, entryway, wall	NAD
018B	Wallboard, White	Rm 6, entryway, wall	NAD
019A	Glue dabs, Black	Speech Rm, chalkboard, rear	8% Chrysotile
019B	Glue dabs, Black	Speech Rm, chalkboard, rear	NA/PS
020A	3" Cove Base, Black	Rm 4, wall	NAD
020B	3" Cove Base, Black	Rm 4, wall	NAD
021A	Mastic, White	Rm 4, wall, assoc., w/ 020A	NAD
021B	Mastic, White	Rm 4, wall, assoc., w/ 020B	NAD
022A	Plaster, White	SE hallway, adjacent to Rm 1-4, wall	NAD
022B	Plaster, White	SE hallway, adjacent to Rm 1-4, wall	NAD
023A	1/4" Wallboard, White	SE hallway, adjacent to Rm 1-4, wall	NAD
023B	1/4" Wallboard, White	SE hallway, adjacent to Rm 1-4, wall	NAD
024A	Acoustical ceiling tile, Gray	SE hallway, adjacent to Rm 1-4, wall	NAD
024B	Acoustical ceiling tile, Gray	SE hallway, adjacent to Rm 1-4, wall	NAD
025A	Fiberglass pipe insulation, Yellow	SE hallway, adjacent to Rm 1-4, wall	NAD
025B	Fiberglass pipe insulation, Yellow	SE hallway, adjacent to Rm 1-4, wall	NAD
025C	Fiberglass pipe insulation, Yellow	SE hallway, adjacent to Rm 1-4, wall	NAD
026A	Corkboard, Brown	Rm 20, wall	NAD
026B	Corkboard, Brown	Rm 20, wall	NAD
027A	Linoleum, Tan, Faux Pebble	Rm 20, window shelf	NAD
027B	Linoleum, Tan, Faux Pebble	Rm 20, window shelf	NAD
028A	Mastic, Dark Brown	Rm 20, window shelf, assoc. w/ 027A	NAD
028B	Mastic, Dark Brown	Rm 20, window shelf, assoc. w/ 027B	NAD
029A	Sheet Covering, Red	Rm 20, window shelf	NAD
029B	Sheet Covering, Red	Rm 20, window shelf	NAD
030A	Mastic, Black	Rm 20, window shelf, assoc. w/ 029A	NAD
030B	Mastic, Black	Rm 20, window shelf, assoc. w/ 029B	NAD
031A	Sealant, Black	Int., windows, aluminum	NAD
031B	Sealant, Black	Int., windows, aluminum	NAD
032A	Joint caulk, Black	Rm 22, exit door, joint, between door frame and brick	NAD
032B	Joint caulk, Black	Rm 22, exit door, joint, between door frame and brick	NAD
033A	Joint caulk, Light Gray	NW-SE hallway, adjacent to Rm 22, wall, between door frame and brick	NAD
033B	Joint caulk, Light Gray	NW-SE hallway, adjacent to Rm 22, wall, between door frame and brick	NAD
034A	Panel Mastic, Tan	NE-SW hallway, between rest rooms, sink	NAD
034B	Panel Mastic, Tan	NE-SW hallway, between rest rooms, sink	NAD
035A	3" Cove Base, Blue	Auditorium hall, wall	NAD
035B	3" Cove Base, Blue	Auditorium hall, wall	NAD
036A	Mastic, Tan	Auditorium hall, wall, assoc. w/ 035A	NAD
036B	Mastic, Tan	Auditorium hall, wall, assoc. w/ 035B	NAD
037A	12"x12" Tile, Speckled Light Tan	Gymnasium, floor	NAD
037B	12"x12" Tile, Speckled Light Tan	Auditorium hall, floor	NAD
038A	Mastic, Black	Gymnasium, floor, assoc. w/ 037A	NAD
038B	Mastic, Black	Auditorium hall, floor, assoc. w/ 037B	NAD
039A	Acoustical Tile, Red	Gymnasium, wall	NAD
039B	Acoustical Tile, Red	Gymnasium, wall	NAD
040A	2'x2' Tile, Large indent, White	Auditorium hall, ceiling	NAD
040B	2'x2' Tile, Large indent, White	Auditorium hall, ceiling	NAD
041A	Plaster, White	Auditorium, ceiling	NAD
041B	Plaster, White	Auditorium, ceiling	NAD
042A	Joint Caulk, Gray	Ext., between gym/auditorium, vertical joint	NAD
042B	Joint Caulk, Gray	Ext., between gym/auditorium, vertical joint	NAD
043A	Caulk, Gray	Ext., main entrance, between window frame and brick	NAD
043B	Caulk, Gray	Ext., main entrance, between window frame and brick	NAD
044A	Mastic, White	Main entrance, metal canopy	NAD
044B	Mastic, White	Main entrance, metal canopy	NAD
045A	Glazing, White	Exterior, Rm 17, Window	NAD
045B	Glazing, White	Exterior, Rm 9, Window	NAD
046A	Felt Layers, Black	Roof, South, Tar & Gravel field, beneath poly-iso	NAD
046B	Felt Layers, Black	Roof, South, Tar & Gravel field, beneath poly-iso	NAD
047A	Seam Sealant, Black/gray	Roof, South, field	NAD
047B	Seam Sealant, Black/gray	Roof, South, field	NAD
048A	Sealant, Black	Roof, vent pipe	NAD
048B	Sealant, Black	Roof, vent pipe	NAD
049A	Flashing caulk, Gray, horizontal	Roof, between entry and auditorium	NAD
049B	Flashing caulk, Gray, horizontal	Roof, between entry and auditorium	NAD
050A	Flashing Caulk, Dark Brown	Roof, horizontal flashing	NAD
050B	Flashing Caulk, Dark Brown	Roof, horizontal flashing	NAD
051A	Felt Layers, Black	Roof, Main entrance, tar & gravel field	NAD
051B	Felt Layers, Black	Roof, Main entrance, tar & gravel field	NAD
052A	Felt Layers, Black	Roof, NW, tar & gravel, beneath poly-iso	NAD
052B	Felt Layers, Black	Roof, NW, tar & gravel, beneath poly-iso	NAD
053A	Roofing insulation, White	Roof, NW, beneath 052A	NAD
053B	Roofing insulation, White	Roof, NW, beneath 052B	NAD
054A	Ceramic block, Tan	Room 5, wall	NAD
054B	Ceramic block, Tan	Room 8, wall	NAD
055A	Grout, Gray	Room 5, wall, assoc. w/ 054A	NAD
055B	Grout, Gray	Room 8, wall, assoc. w/ 054B	NAD
056A	Ceramic Tile, Light Gray/Green	Girls Lavatory, floor	NAD
056B	Ceramic Tile, Light Gray/Green	Girls Lavatory, floor	NAD
057A	Grout, Dark Gray	Girls Lavatory, floor, assoc. w/ 056A	NAD
057B	Grout, Dark Gray	Girls Lavatory, floor, assoc. w/ 056B	NAD
058A	Ceramic Tile, Red	Boys Lavatory, floor	NAD
058B	Ceramic Tile, Red	Boys Lavatory, floor	NAD
059A	Grout, Dark Gray	Boys Lavatory, floor, assoc. w/ 058A	NAD
059B	Grout, Dark Gray	Boys Lavatory, floor, assoc. w/ 058B	NAD
060A	Plaster, White	Hallway, ceiling, southwest	2% Chrysotile
060B	Plaster, White	Hallway, ceiling, outside room 17	NA/PS
060C	Plaster, White	Hallway, ceiling, outside room 8	NA/PS

NOTES:

NAD - No Asbestos Detected
NA/PS - Sample Not Analyzed Due To Positive Stop

TABLE 2
CONFIRMED ASBESTOS-CONTAINING MATERIAL RESULTS
 JOHN WICKES ELEMENTARY
 50 Child Lane
 Warwick, RI

MATERIAL DESCRIPTION	MATERIAL LOCATION	PERCENT/TYPE ASBESTOS	USEPA CATEGORY	CONDITION	ESTIMATED QUANTITY
9"x9" tile, blue	Interior, all-purpose room, closet, floor	5% Chrysotile	Cat. I Nonfriable	Slightly damaged	36 SF
Tile Mastic, black	Interior, all-purpose room, closet, floor	3% Chrysotile	Cat. I Nonfriable	Good	36 SF
9"x9" tile, green	Staff kitchen, counter	3% Chrysotile	Cat. I Nonfriable	Slightly damaged	24 SF
Tile Mastic, black	Staff kitchen, counter	2% Chrysotile	Cat. I Nonfriable	Good	24 SF
Anti-condensate, black	Staff kitchen, sink, underside	5% Chrysotile	Cat. I Nonfriable	Good	4 SF
Plaster, white	Hallway, ceilings	2-3% Chrysotile	Cat. I Nonfriable	Damaged	3,840 SF
Glue Daubs, black	Classrooms, chalkboard, backside	8% Chrysotile	Cat. I Nonfriable	Good	1,600 SF
Thermal pipe insulation, gray/white	Hallway, wet walls	Presumed	RACM	Slightly damaged	104 LF
Thermal pipe insulation, gray/white	Hallways/closets/rooms, suspended	Presumed	RACM	Slightly damaged	189 LF
Thermal pipe insulation, gray/white	Hallway, above finished ceilings	Presumed	RACM	Slightly damaged	987 LF
Glazing, white	Exterior, courtyard, windows, metal frame	2% Chrysotile	Cat. I Nonfriable	Damaged	220 LF

1. LF = Linear Feet, SF = Square Feet

2. RACM: Includes materials that, when dry, may be crumbled, pulverized or reduced to powder by hand pressure.

3. Category I Non-friable: Includes asbestos-containing packings, gaskets, asphaltic roofing products, resilient flooring, pliable sealants and mastics.

4. Category II Non-friable: Includes any non-friable materials other than Category I materials that contain more than 1% asbestos.

This summary includes the location, material type, and approximate quantities of accessible asbestos identified in the site buildings. Quantities of materials were assessed by a non-calibrated wheeled tape measure or visual estimation and should be considered as approximate values. It should be noted that these are only estimates, and are based on limited visual observations of accessible areas of the site.

TABLE 3
PCB SAMPLE SUMMARY
 50 Child Lane
 Warwick, Rhode Island

SAMPLE NUMBER	MATERIAL DESCRIPTION	MATERIAL LOCATION	CONCENTRATION (mg/kg) - TYPE PCB
PCB-01	Glazing, white	Exterior, courtyard, windows	BRL
PCB-02	Sealant, black	Interior, staff room, window frame, aluminum	Aroclor 1254 - 1.7
PCB-03	Joint Caulk, black	Rm 22, exit door, between door frame and brick	BRL
PCB-04	Joint Cauk, light gray	Hallway, adjacent to Rm 22, wall, between door frame and brick	BRL
PCB-05	Joint Caulk, Gray	Exterior, between gym.auditorium, vertical joint between brick	Aroclor 1254 - 1.0
PCB-06	Caulk, dark gray	Ext., main entrance, between window frame and brick	BRL
PCB-07	Glazing, white	Exterior, classroom windows	Aroclor 1254 - 0.6
PCB-08	Flashing Caulk, gray	Roof, between entry and auditorium, horizontal	BRL

NOTES:

1. mg/kg: milligram per kilogram
2. BRL: Below Reporting Limit
3. BOLD: USEPA level > 50 mg/kg defined as a PCB Bulk Product Waste.
4. Analysis conducted for PCBs via USEPA Method SW846-8082A.

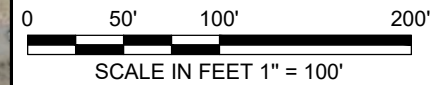
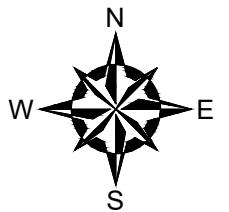
TABLE 4
HAZARDOUS MATERIALS INVENTORY
50 Child Lane
Warwick, Rhode Island

MATERIAL DESCRIPTION	HAZARD	ESTIMATED QUANTITY	NOTES
<i>Main Building</i>			
Fluorescent light bulb	Mercury	29 Units	
Fluorescent light ballast	PCBs/DEHP	13 Units	
Emergency/exit light battery	Lead acid batteries	14 Units	
Switches/Fuse box	Mercury	5 Units	
Mercury Thermostats	Mercury	2 Units	
Hydraulic door closers	Oils	2 Units	
Fire extinguisher	N/A	2 Units	
Halogen bulb	Mercury/Iodine/Bromine	7 Units	Exterior
Refrigerator	CFCs	1 Unit	Walk-in
Smoke detector	NA	6 Units	
HVAC Condensor	CFCs	2 Units	Roof
Water heater	Mercury	2 Units	
<i>Garage</i>			
Fire doors	Asbestos core	1 Unit	Garage
Electric heater	N/A	2 Units	Free-standing
Fire extinguisher	N/A	1 Unit	
Fluorescent light bulb	Mercury	4 Units	
Switches/Fuse box	Mercury	7 Units	



FIGURES

© 2021 - GZA GeoEnvironmental, Inc. GZA-J:\ENV\34957.EMB\FIGURES\CAD\DWGS\34975.00-PHASE 1 ESA.DWG ANSI B - 17X11 NOVEMBER 15, 2021 ANTHONY DONATH



NO.	ISSUE/DESCRIPTION	BY	DATE

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL, INC. (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

JOHN WICKES ELEMENTARY SCHOOL
 50 CHILDS LANE
 WARWICK, RI 02886

SITE PLAN

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: CITY OF WARWICK WARWICK, RI 02886	
PROJ MGR: EMB DESIGNED BY: EMB DATE: NOVEMBER 2021	REVIEWED BY: DRAWN BY: ADD PROJECT NO.: 34957.00	CHECKED BY: SCALE: 1" = 100' REVISION NO.: 0	FIGURE 1 SHEET NO. 1 OF 1



APPENDIX A
LIMITATIONS

LIMITATIONS



1. GZA GeoEnvironmental, Inc.'s (GZA's) asbestos/lead-containing paint/hazardous materials evaluation was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same geographical area, and GZA observed the degree of care and skill generally exercised by other consultants under similar circumstances and conditions. GZA's findings and conclusions must be considered not as scientific certainties, but rather as our professional opinion concerning the significance of the limited data gathered during the course of the asbestos/LCP/hazardous materials evaluation. No other warranty, expressed or implied, is made. Specifically, GZA does not and cannot represent that the Sites contains no asbestos-containing materials, lead-containing paint, hazardous materials, polychlorinated biphenyls or other latent condition beyond that observed by GZA during its asbestos/LCP/hazardous materials evaluation.
2. This survey report, which presents our findings, is not to be used as a bid document/work plan, or in place of a work plan, for conducting asbestos, LCP and hazardous materials abatement. When an asbestos abatement work plan is prepared, the USEPA and the RIDOH require that an USEPA-certified accredited Asbestos Project Designer prepare the plan. GZA recommends that a work plan be prepared and a bid walkthrough be administered by licensed GZA personnel familiar with the on-site conditions.
3. The observations described in this report were made under the conditions stated herein. The conclusions presented in the report were based solely upon the services described therein, and not on scientific tasks or procedures beyond the proposed Scope of Services.
4. The conclusions and recommendations contained in this report are based on limited environmental sampling and visual observations, and were arrived at in accordance with generally accepted standards of industrial hygiene practice. No other warranty, expressed or implied, is made.
5. Where sample analyses were conducted by an outside laboratory, GZA has relied upon the data provided, and has not conducted an independent evaluation of the reliability of these data.
6. The purpose of this report was to assess the physical characteristics of the subject Site with respect to the presence of hazardous materials in the Site building. No specific attempt was made to check on the compliance by any party with federal, State, or local laws and regulations.
7. Observations were made of the Sites as indicated within the report. While it was GZA's intent to conduct a thorough survey, it is important to note that we cannot guarantee that all asbestos or potentially hazardous materials within the surveyed area have been identified. ACMs, LCP, PCBs and universal wastes have frequently been used in areas where detection is difficult until renovation, demolition, and/or asbestos abatement work begins and allows access to these remote areas. Where access to portions of the Sites were unavailable or limited, GZA has provided an opinion as to the likely presence of hazardous materials consistent with the information available. Suspect materials made accessible during demolition activities must be assumed to be hazardous and handled as such, until testing proves otherwise.



APPENDIX B
CERTIFICATIONS



State of Rhode Island and Providence Plantations
DEPARTMENT OF HEALTH
CENTER FOR HEALTHY HOMES & ENVIRONMENT – ASBESTOS PROGRAM

ASBESTOS CONSULTANT CERTIFICATION

Pursuant to the Asbestos Abatement Act, Chapter 24.5 of Title 23 of the Rhode Island General Laws, and Regulation 216-RICR-50-15-1 – Asbestos Control, this license is hereby issued as designated below. This license is subject to all applicable rules, regulations, orders and notices of the Department of Health now or hereafter in effect and to any conditions delineated below.

Certificate Holder: ERIK BELOFF
Address: GZA ENVIRONMENTAL INC
530 BROADWAY
PROVIDENCE RI 02909

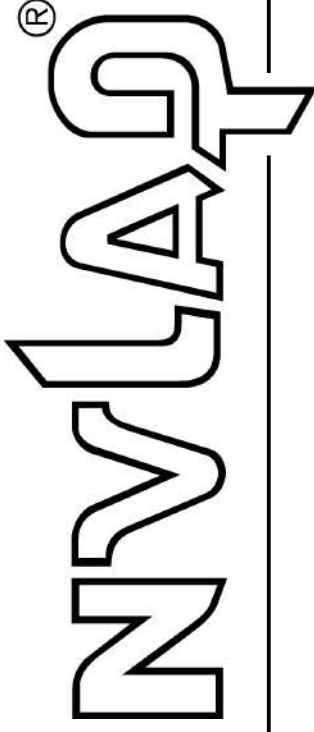
Certification Number: AI00938
Type of Certification: Asbestos Inspector
Expiration Date: 10/31/2021

Except as specifically provided otherwise in this Certificate, Certificate holders shall conduct their program in accordance with statements, procedures and representations contained in their application, including any attachments. Regulation 216-RICR-50-15-1 - Asbestos Control shall govern unless the statements, representations and procedures in the Certificate Holder's application and documentation are more restrictive than the regulations.

Raquel Barrera

Raquel Barrera
Sr. Community Program Liaison Worker
Healthy Homes and Environment

United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 200090-0

ProScience Analytical Services, Inc.

Woburn, MA

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,
listed on the Scope of Accreditation, for:*

Asbestos Fiber Analysis

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality
management system (refer to joint ISO-ILAC-IAF Communiqué dated January 2009).*

2021-01-01 through 2021-12-31

Effective Dates

A handwritten signature in black ink, appearing to read "Peter S. Lamm".

For the National Voluntary Laboratory Accreditation Program



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ProScience Analytical Services, Inc.

22 Cummings Park
Woburn, MA 01801-2122
Ms. Aimee Cormier
Phone: 781-935-3212 Fax: 781-932-4857
Email: aimee.cormier@proscience.net
<http://www.proscience.net>

ASBESTOS FIBER ANALYSIS

NVLAP LAB CODE 200090-0

Bulk Asbestos Analysis

<u>Code</u>	<u>Description</u>
18/A01	EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

<u>Code</u>	<u>Description</u>
18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.

A handwritten signature in black ink, appearing to read "Jane S. Laman".

For the National Voluntary Laboratory Accreditation Program



State of Rhode Island and Providence Plantations
DEPARTMENT OF HEALTH
CENTER FOR HEALTHY HOMES & ENVIRONMENT – ASBESTOS PROGRAM

ASBESTOS CONSULTANT CERTIFICATION

Pursuant to the Asbestos Abatement Act, Chapter 24.5 of Title 23 of the Rhode Island General Laws, and Regulation 216-RICR-50-15-1 – Asbestos Control, this license is hereby issued as designated below. This license is subject to all applicable rules, regulations, orders and notices of the Department of Health now or hereafter in effect and to any conditions delineated below.

Certificate Holder: **BENJAMIN RAMOS**
Address: **NONE**
UNKNOWN NA 00000

Certification Number: **AI01136**
Type of Certification: **Asbestos Inspector**
Expiration Date: **09/30/2022**

Except as specifically provided otherwise in this Certificate, Certificate holders shall conduct their program in accordance with statements, procedures and representations contained in their application, including any attachments. Regulation 216-RICR-50-15-1 - Asbestos Control shall govern unless the statements, representations and procedures in the Certificate Holder's application and documentation are more restrictive than the regulations.

Raquel Barrera

Raquel Barrera
Sr. Community Program Liaison Worker
Healthy Homes and Environment



APPENDIX C

LABORATORY ANALYTICAL REPORTS



CERTIFICATE OF ANALYSIS

Erik Beloff
GZA GeoEnvironmental, Inc.
188 Valley Street
Providence, RI 02909

RE: Warwick Schools (34957.00)
ESS Laboratory Work Order Number: 21J0518

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director



Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Warwick Schools

ESS Laboratory Work Order: 21J0518

SAMPLE RECEIPT

The following samples were received on October 15, 2021 for the analyses specified on the enclosed Chain of Custody Record.

The cooler temperature was not within the acceptance criteria of $\leq 6^{\circ}\text{C}$.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
21J0518-01	PCB-01	Solid	8082A
21J0518-02	PCB-02	Solid	8082A
21J0518-03	PCB-03	Solid	8082A
21J0518-04	PCB-04	Solid	8082A
21J0518-05	PCB-05	Solid	8082A
21J0518-06	PCB-06	Solid	8082A
21J0518-07	PCB-07	Solid	8082A
21J0518-08	PCB-08	Solid	8082A



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Warwick Schools

ESS Laboratory Work Order: 21J0518

PROJECT NARRATIVE

8082A Polychlorinated Biphenyls (PCB)

21J0518-03 [Surrogate recovery\(ies\) outside of criteria due to matrix \(UCM/coelution/matrix is present\) \(SM\).](#)

Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%)

21J0518-08 [Surrogate recovery\(ies\) below lower control limit \(S-\).](#)

Decachlorobiphenyl (28% @ 30-150%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

[Definitions of Quality Control Parameters](#)

[Semivolatile Organics Internal Standard Information](#)

[Semivolatile Organics Surrogate Information](#)

[Volatile Organics Internal Standard Information](#)

[Volatile Organics Surrogate Information](#)

[EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Warwick Schools

ESS Laboratory Work Order: 21J0518

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

- 1010A - Flashpoint
- 6010C - ICP
- 6020A - ICP MS
- 7010 - Graphite Furnace
- 7196A - Hexavalent Chromium
- 7470A - Aqueous Mercury
- 7471B - Solid Mercury
- 8011 - EDB/DBCP/TCP
- 8015C - GRO/DRO
- 8081B - Pesticides
- 8082A - PCB
- 8100M - TPH
- 8151A - Herbicides
- 8260B - VOA
- 8270D - SVOA
- 8270D SIM - SVOA Low Level
- 9014 - Cyanide
- 9038 - Sulfate
- 9040C - Aqueous pH
- 9045D - Solid pH (Corrosivity)
- 9050A - Specific Conductance
- 9056A - Anions (IC)
- 9060A - TOC
- 9095B - Paint Filter
- MADEP 04-1.1 - EPH
- MADEP 18-2.1 - VPH

Prep Methods

- 3005A - Aqueous ICP Digestion
- 3020A - Aqueous Graphite Furnace / ICP MS Digestion
- 3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
- 3060A - Solid Hexavalent Chromium Digestion
- 3510C - Separatory Funnel Extraction
- 3520C - Liquid / Liquid Extraction
- 3540C - Manual Soxhlet Extraction
- 3541 - Automated Soxhlet Extraction
- 3546 - Microwave Extraction
- 3580A - Waste Dilution
- 5030B - Aqueous Purge and Trap
- 5030C - Aqueous Purge and Trap
- 5035A - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Warwick Schools
Client Sample ID: PCB-01
Date Sampled: 10/12/21 00:00
Percent Solids: N/A
Initial Volume: 2.09
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 21J0518
ESS Laboratory Sample ID: 21J0518-01
Sample Matrix: Solid
Units: mg/kg wet
Analyst: JLG
Prepared: 10/15/21 19:00

8082A Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.2)		8082A		1	10/18/21 20:16		DJ11505
Aroclor 1221	ND (0.2)		8082A		1	10/18/21 20:16		DJ11505
Aroclor 1232	ND (0.2)		8082A		1	10/18/21 20:16		DJ11505
Aroclor 1242	ND (0.2)		8082A		1	10/18/21 20:16		DJ11505
Aroclor 1248	ND (0.2)		8082A		1	10/18/21 20:16		DJ11505
Aroclor 1254	ND (0.2)		8082A		1	10/18/21 20:16		DJ11505
Aroclor 1260	ND (0.2)		8082A		1	10/18/21 20:16		DJ11505
Aroclor 1262	ND (0.2)		8082A		1	10/18/21 20:16		DJ11505
Aroclor 1268	ND (0.2)		8082A		1	10/18/21 20:16		DJ11505

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	108 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	69 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	97 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	92 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Warwick Schools
Client Sample ID: PCB-02
Date Sampled: 10/12/21 00:00
Percent Solids: N/A
Initial Volume: 2.27
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 21J0518
ESS Laboratory Sample ID: 21J0518-02
Sample Matrix: Solid
Units: mg/kg wet
Analyst: JLG
Prepared: 10/15/21 19:00

8082A Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.2)		8082A		1	10/18/21 15:24		DJ11506
Aroclor 1221	ND (0.2)		8082A		1	10/18/21 15:24		DJ11506
Aroclor 1232	ND (0.2)		8082A		1	10/18/21 15:24		DJ11506
Aroclor 1242	ND (0.2)		8082A		1	10/18/21 15:24		DJ11506
Aroclor 1248	ND (0.2)		8082A		1	10/18/21 15:24		DJ11506
Aroclor 1254	1.7 (0.2)		8082A		1	10/18/21 15:24		DJ11506
Aroclor 1260	ND (0.2)		8082A		1	10/18/21 15:24		DJ11506
Aroclor 1262	ND (0.2)		8082A		1	10/18/21 15:24		DJ11506
Aroclor 1268	ND (0.2)		8082A		1	10/18/21 15:24		DJ11506

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	95 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	105 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	125 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	112 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Warwick Schools
 Client Sample ID: PCB-03
 Date Sampled: 10/12/21 00:00
 Percent Solids: N/A
 Initial Volume: 2.69
 Final Volume: 10
 Extraction Method: 3540C

ESS Laboratory Work Order: 21J0518
 ESS Laboratory Sample ID: 21J0518-03
 Sample Matrix: Solid
 Units: mg/kg wet
 Analyst: JLG
 Prepared: 10/15/21 19:00

8082A Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.2)		8082A		1	10/22/21 13:34		DJ12101
Aroclor 1221	ND (0.2)		8082A		1	10/22/21 13:34		DJ12101
Aroclor 1232	ND (0.2)		8082A		1	10/22/21 13:34		DJ12101
Aroclor 1242	ND (0.2)		8082A		1	10/22/21 13:34		DJ12101
Aroclor 1248	ND (0.2)		8082A		1	10/22/21 13:34		DJ12101
Aroclor 1254	ND (0.2)		8082A		1	10/22/21 13:34		DJ12101
Aroclor 1260	ND (0.2)		8082A		1	10/22/21 13:34		DJ12101
Aroclor 1262	ND (0.2)		8082A		1	10/22/21 13:34		DJ12101
Aroclor 1268	ND (0.2)		8082A		1	10/22/21 13:34		DJ12101

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	%	SM	30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	%	SM	30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	56 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	65 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Warwick Schools
 Client Sample ID: PCB-04
 Date Sampled: 10/12/21 00:00
 Percent Solids: N/A
 Initial Volume: 2.45
 Final Volume: 10
 Extraction Method: 3540C

ESS Laboratory Work Order: 21J0518
 ESS Laboratory Sample ID: 21J0518-04
 Sample Matrix: Solid
 Units: mg/kg wet
 Analyst: JLG
 Prepared: 10/15/21 19:00

8082A Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.2)		8082A		1	10/22/21 6:12		DJ11506
Aroclor 1221	ND (0.2)		8082A		1	10/22/21 6:12		DJ11506
Aroclor 1232	ND (0.2)		8082A		1	10/22/21 6:12		DJ11506
Aroclor 1242	ND (0.2)		8082A		1	10/22/21 6:12		DJ11506
Aroclor 1248	ND (0.2)		8082A		1	10/22/21 6:12		DJ11506
Aroclor 1254	ND (0.2)		8082A		1	10/22/21 6:12		DJ11506
Aroclor 1260	ND (0.2)		8082A		1	10/22/21 6:12		DJ11506
Aroclor 1262	ND (0.2)		8082A		1	10/22/21 6:12		DJ11506
Aroclor 1268	ND (0.2)		8082A		1	10/22/21 6:12		DJ11506

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	77 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	79 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	83 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	93 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Warwick Schools
Client Sample ID: PCB-05
Date Sampled: 10/12/21 00:00
Percent Solids: N/A
Initial Volume: 2.11
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 21J0518
ESS Laboratory Sample ID: 21J0518-05
Sample Matrix: Solid
Units: mg/kg wet
Analyst: JLG
Prepared: 10/15/21 19:00

8082A Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.2)		8082A		1	10/22/21 6:33		DJ11506
Aroclor 1221	ND (0.2)		8082A		1	10/22/21 6:33		DJ11506
Aroclor 1232	ND (0.2)		8082A		1	10/22/21 6:33		DJ11506
Aroclor 1242	ND (0.2)		8082A		1	10/22/21 6:33		DJ11506
Aroclor 1248	ND (0.2)		8082A		1	10/22/21 6:33		DJ11506
Aroclor 1254 [2C]	1.0 (0.2)		8082A		1	10/22/21 6:33		DJ11506
Aroclor 1260	ND (0.2)		8082A		1	10/22/21 6:33		DJ11506
Aroclor 1262	ND (0.2)		8082A		1	10/22/21 6:33		DJ11506
Aroclor 1268	ND (0.2)		8082A		1	10/22/21 6:33		DJ11506

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	64 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	67 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	83 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	91 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Warwick Schools
Client Sample ID: PCB-06
Date Sampled: 10/12/21 00:00
Percent Solids: N/A
Initial Volume: 2.56
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 21J0518
ESS Laboratory Sample ID: 21J0518-06
Sample Matrix: Solid
Units: mg/kg wet
Analyst: JLG
Prepared: 10/15/21 19:00

8082A Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.2)		8082A		1	10/22/21 6:53		DJ11506
Aroclor 1221	ND (0.2)		8082A		1	10/22/21 6:53		DJ11506
Aroclor 1232	ND (0.2)		8082A		1	10/22/21 6:53		DJ11506
Aroclor 1242	ND (0.2)		8082A		1	10/22/21 6:53		DJ11506
Aroclor 1248	ND (0.2)		8082A		1	10/22/21 6:53		DJ11506
Aroclor 1254	ND (0.2)		8082A		1	10/22/21 6:53		DJ11506
Aroclor 1260	ND (0.2)		8082A		1	10/22/21 6:53		DJ11506
Aroclor 1262	ND (0.2)		8082A		1	10/22/21 6:53		DJ11506
Aroclor 1268	ND (0.2)		8082A		1	10/22/21 6:53		DJ11506

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	83 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	95 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	91 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	105 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Warwick Schools
 Client Sample ID: PCB-07
 Date Sampled: 10/12/21 00:00
 Percent Solids: N/A
 Initial Volume: 2.18
 Final Volume: 10
 Extraction Method: 3540C

ESS Laboratory Work Order: 21J0518
 ESS Laboratory Sample ID: 21J0518-07
 Sample Matrix: Solid
 Units: mg/kg wet
 Analyst: JLG
 Prepared: 10/15/21 19:00

8082A Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.2)		8082A		1	10/18/21 17:03		DJ11506
Aroclor 1221	ND (0.2)		8082A		1	10/18/21 17:03		DJ11506
Aroclor 1232	ND (0.2)		8082A		1	10/18/21 17:03		DJ11506
Aroclor 1242	ND (0.2)		8082A		1	10/18/21 17:03		DJ11506
Aroclor 1248	ND (0.2)		8082A		1	10/18/21 17:03		DJ11506
Aroclor 1254 [2C]	0.6 (0.2)		8082A		1	10/18/21 17:03		DJ11506
Aroclor 1260	ND (0.2)		8082A		1	10/18/21 17:03		DJ11506
Aroclor 1262	ND (0.2)		8082A		1	10/18/21 17:03		DJ11506
Aroclor 1268	ND (0.2)		8082A		1	10/18/21 17:03		DJ11506

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	113 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	105 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	107 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	119 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Warwick Schools
Client Sample ID: PCB-08
Date Sampled: 10/12/21 00:00
Percent Solids: N/A
Initial Volume: 2.15
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 21J0518
ESS Laboratory Sample ID: 21J0518-08
Sample Matrix: Solid
Units: mg/kg wet
Analyst: JLG
Prepared: 10/15/21 19:00

8082A Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.2)		8082A		1	10/18/21 17:23		DJ11506
Aroclor 1221	ND (0.2)		8082A		1	10/18/21 17:23		DJ11506
Aroclor 1232	ND (0.2)		8082A		1	10/18/21 17:23		DJ11506
Aroclor 1242	ND (0.2)		8082A		1	10/18/21 17:23		DJ11506
Aroclor 1248	ND (0.2)		8082A		1	10/18/21 17:23		DJ11506
Aroclor 1254	ND (0.2)		8082A		1	10/18/21 17:23		DJ11506
Aroclor 1260	ND (0.2)		8082A		1	10/18/21 17:23		DJ11506
Aroclor 1262	ND (0.2)		8082A		1	10/18/21 17:23		DJ11506
Aroclor 1268	ND (0.2)		8082A		1	10/18/21 17:23		DJ11506

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	28 %	S-	30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	43 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	55 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	141 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Warwick Schools

ESS Laboratory Work Order: 21J0518

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8082A Polychlorinated Biphenyls (PCB)

Batch DJ11505 - 3540C

Blank

Aroclor 1016	ND	0.02	mg/kg wet							
Aroclor 1016 [2C]	ND	0.02	mg/kg wet							
Aroclor 1221	ND	0.02	mg/kg wet							
Aroclor 1221 [2C]	ND	0.02	mg/kg wet							
Aroclor 1232	ND	0.02	mg/kg wet							
Aroclor 1232 [2C]	ND	0.02	mg/kg wet							
Aroclor 1242	ND	0.02	mg/kg wet							
Aroclor 1242 [2C]	ND	0.02	mg/kg wet							
Aroclor 1248	ND	0.02	mg/kg wet							
Aroclor 1248 [2C]	ND	0.02	mg/kg wet							
Aroclor 1254	ND	0.02	mg/kg wet							
Aroclor 1254 [2C]	ND	0.02	mg/kg wet							
Aroclor 1260	ND	0.02	mg/kg wet							
Aroclor 1260 [2C]	ND	0.02	mg/kg wet							
Aroclor 1262	ND	0.02	mg/kg wet							
Aroclor 1262 [2C]	ND	0.02	mg/kg wet							
Aroclor 1268	ND	0.02	mg/kg wet							
Aroclor 1268 [2C]	ND	0.02	mg/kg wet							

Surrogate: Decachlorobiphenyl	0.0257		mg/kg wet	0.02500		103	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0232		mg/kg wet	0.02500		93	30-150			
Surrogate: Tetrachloro-m-xylene	0.0231		mg/kg wet	0.02500		92	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0232		mg/kg wet	0.02500		93	30-150			

LCS

Aroclor 1016	0.4	0.02	mg/kg wet	0.5000		90	40-140			
Aroclor 1016 [2C]	0.4	0.02	mg/kg wet	0.5000		84	40-140			
Aroclor 1260	0.5	0.02	mg/kg wet	0.5000		93	40-140			
Aroclor 1260 [2C]	0.5	0.02	mg/kg wet	0.5000		90	40-140			

Surrogate: Decachlorobiphenyl	0.0256		mg/kg wet	0.02500		103	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0232		mg/kg wet	0.02500		93	30-150			
Surrogate: Tetrachloro-m-xylene	0.0233		mg/kg wet	0.02500		93	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0222		mg/kg wet	0.02500		89	30-150			

LCS Dup

Aroclor 1016	0.5	0.02	mg/kg wet	0.5000		92	40-140	2	30	
Aroclor 1016 [2C]	0.4	0.02	mg/kg wet	0.5000		86	40-140	2	30	
Aroclor 1260	0.5	0.02	mg/kg wet	0.5000		95	40-140	2	30	
Aroclor 1260 [2C]	0.5	0.02	mg/kg wet	0.5000		92	40-140	2	30	

Surrogate: Decachlorobiphenyl	0.0261		mg/kg wet	0.02500		104	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0237		mg/kg wet	0.02500		95	30-150			
Surrogate: Tetrachloro-m-xylene	0.0233		mg/kg wet	0.02500		93	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0225		mg/kg wet	0.02500		90	30-150			

Batch DJ11506 - 3540C



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Warwick Schools

ESS Laboratory Work Order: 21J0518

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8082A Polychlorinated Biphenyls (PCB)

Batch DJ11506 - 3540C

Blank

Aroclor 1016	ND	0.02	mg/kg wet							
Aroclor 1016 [2C]	ND	0.02	mg/kg wet							
Aroclor 1221	ND	0.02	mg/kg wet							
Aroclor 1221 [2C]	ND	0.02	mg/kg wet							
Aroclor 1232	ND	0.02	mg/kg wet							
Aroclor 1232 [2C]	ND	0.02	mg/kg wet							
Aroclor 1242	ND	0.02	mg/kg wet							
Aroclor 1242 [2C]	ND	0.02	mg/kg wet							
Aroclor 1248	ND	0.02	mg/kg wet							
Aroclor 1248 [2C]	ND	0.02	mg/kg wet							
Aroclor 1254	ND	0.02	mg/kg wet							
Aroclor 1254 [2C]	ND	0.02	mg/kg wet							
Aroclor 1260	ND	0.02	mg/kg wet							
Aroclor 1260 [2C]	ND	0.02	mg/kg wet							
Aroclor 1262	ND	0.02	mg/kg wet							
Aroclor 1262 [2C]	ND	0.02	mg/kg wet							
Aroclor 1268	ND	0.02	mg/kg wet							
Aroclor 1268 [2C]	ND	0.02	mg/kg wet							

Surrogate: Decachlorobiphenyl	0.0273		mg/kg wet	0.02500		109	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0249		mg/kg wet	0.02500		99	30-150			
Surrogate: Tetrachloro-m-xylene	0.0214		mg/kg wet	0.02500		86	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0240		mg/kg wet	0.02500		96	30-150			

LCS

Aroclor 1016	0.5	0.02	mg/kg wet	0.5000		108	40-140			
Aroclor 1016 [2C]	0.5	0.02	mg/kg wet	0.5000		98	40-140			
Aroclor 1260	0.6	0.02	mg/kg wet	0.5000		111	40-140			
Aroclor 1260 [2C]	0.5	0.02	mg/kg wet	0.5000		101	40-140			

Surrogate: Decachlorobiphenyl	0.0303		mg/kg wet	0.02500		121	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0267		mg/kg wet	0.02500		107	30-150			
Surrogate: Tetrachloro-m-xylene	0.0258		mg/kg wet	0.02500		103	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0261		mg/kg wet	0.02500		104	30-150			

LCS Dup

Aroclor 1016	0.6	0.02	mg/kg wet	0.5000		111	40-140	3	30	
Aroclor 1016 [2C]	0.5	0.02	mg/kg wet	0.5000		95	40-140	3	30	
Aroclor 1260	0.5	0.02	mg/kg wet	0.5000		105	40-140	5	30	
Aroclor 1260 [2C]	0.5	0.02	mg/kg wet	0.5000		99	40-140	2	30	

Surrogate: Decachlorobiphenyl	0.0295		mg/kg wet	0.02500		118	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0259		mg/kg wet	0.02500		104	30-150			
Surrogate: Tetrachloro-m-xylene	0.0247		mg/kg wet	0.02500		99	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0250		mg/kg wet	0.02500		100	30-150			

Batch DJ12101 - 3540C



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Warwick Schools

ESS Laboratory Work Order: 21J0518

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8082A Polychlorinated Biphenyls (PCB)

Batch DJ12101 - 3540C

Blank

Aroclor 1016	ND	0.02	mg/kg wet							
Aroclor 1016 [2C]	ND	0.02	mg/kg wet							
Aroclor 1221	ND	0.02	mg/kg wet							
Aroclor 1221 [2C]	ND	0.02	mg/kg wet							
Aroclor 1232	ND	0.02	mg/kg wet							
Aroclor 1232 [2C]	ND	0.02	mg/kg wet							
Aroclor 1242	ND	0.02	mg/kg wet							
Aroclor 1242 [2C]	ND	0.02	mg/kg wet							
Aroclor 1248	ND	0.02	mg/kg wet							
Aroclor 1248 [2C]	ND	0.02	mg/kg wet							
Aroclor 1254	ND	0.02	mg/kg wet							
Aroclor 1254 [2C]	ND	0.02	mg/kg wet							
Aroclor 1260	ND	0.02	mg/kg wet							
Aroclor 1260 [2C]	ND	0.02	mg/kg wet							
Aroclor 1262	ND	0.02	mg/kg wet							
Aroclor 1262 [2C]	ND	0.02	mg/kg wet							
Aroclor 1268	ND	0.02	mg/kg wet							
Aroclor 1268 [2C]	ND	0.02	mg/kg wet							

Surrogate: Decachlorobiphenyl	0.0221		mg/kg wet	0.02500		88	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0224		mg/kg wet	0.02500		89	30-150			
Surrogate: Tetrachloro-m-xylene	0.0216		mg/kg wet	0.02500		86	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0244		mg/kg wet	0.02500		98	30-150			

LCS

Aroclor 1016	0.5	0.02	mg/kg wet	0.5000		93	40-140			
Aroclor 1016 [2C]	0.5	0.02	mg/kg wet	0.5000		91	40-140			
Aroclor 1260	0.5	0.02	mg/kg wet	0.5000		93	40-140			
Aroclor 1260 [2C]	0.4	0.02	mg/kg wet	0.5000		88	40-140			

Surrogate: Decachlorobiphenyl	0.0237		mg/kg wet	0.02500		95	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0240		mg/kg wet	0.02500		96	30-150			
Surrogate: Tetrachloro-m-xylene	0.0242		mg/kg wet	0.02500		97	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0249		mg/kg wet	0.02500		100	30-150			

LCS Dup

Aroclor 1016	0.5	0.02	mg/kg wet	0.5000		92	40-140	1	30	
Aroclor 1016 [2C]	0.4	0.02	mg/kg wet	0.5000		88	40-140	3	30	
Aroclor 1260	0.4	0.02	mg/kg wet	0.5000		89	40-140	4	30	
Aroclor 1260 [2C]	0.4	0.02	mg/kg wet	0.5000		85	40-140	3	30	

Surrogate: Decachlorobiphenyl	0.0225		mg/kg wet	0.02500		90	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0230		mg/kg wet	0.02500		92	30-150			
Surrogate: Tetrachloro-m-xylene	0.0227		mg/kg wet	0.02500		91	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0234		mg/kg wet	0.02500		93	30-150			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Warwick Schools

ESS Laboratory Work Order: 21J0518

Notes and Definitions

- U Analyte included in the analysis, but not detected
- SM Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).
- S- Surrogate recovery(ies) below lower control limit (S-).
- ND Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- MDL Method Detection Limit
- MRL Method Reporting Limit
- LOD Limit of Detection
- LOQ Limit of Quantitation
- DL Detection Limit
- I/V Initial Volume
- F/V Final Volume
- § Subcontracted analysis; see attached report
- 1 Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
- 2 Range result excludes concentrations of target analytes eluting in that range.
- 3 Range result excludes the concentration of the C9-C10 aromatic range.
- Avg Results reported as a mathematical average.
- NR No Recovery
- [CALC] Calculated Analyte
- SUB Subcontracted analysis; see attached report
- RL Reporting Limit
- EDL Estimated Detection Limit
- MF Membrane Filtration
- MPN Most Probable Number
- TNTC Too numerous to Count
- CFU Colony Forming Units



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Warwick Schools

ESS Laboratory Work Order: 21J0518

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179

<http://www.health.ri.gov/find/labs/analytical/ESS.pdf>

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750

http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutOfStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002

<http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

Pennsylvania: 68-01752

<http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx>

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/KPB

ESS Project ID: 21J0518

Date Received: 10/15/2021

Project Due Date: 10/22/2021

Days for Project: 5 Day

Shipped/Delivered Via: ESS Courier Client
w/ whiskey

- 1. Air bill manifest present? No
Air No.: NA
- 2. Were custody seals present? No
- 3. Is radiation count <100 CPM? Yes
- 4. Is a Cooler Present? Yes
Temp: 25.6 Iced with: None
- 5. Was COC signed and dated by client? Yes

- 6. Does COC match bottles? Yes
- 7. Is COC complete and correct? Yes
- 8. Were samples received intact? Yes
- 9. Were labs informed about short holds & rushes? Yes / No / NA
- 10. Were any analyses received outside of hold time? Yes / No

- 11. Any Subcontracting needed? Yes / No
ESS Sample IDs: _____
Analysis: _____
TAT: _____

- 12. Were VOAs received? Yes / No
a. Air bubbles in aqueous VOAs? Yes / No
b. Does methanol cover soil completely? Yes / No / NA

- 13. Are the samples properly preserved? Yes / No
a. If metals preserved upon receipt: Date: _____ Time: _____ By: _____
b. Low Level VOA vials frozen: Date: _____ Time: _____ By: _____

Sample Receiving Notes:

No Cooling media

- 14. Was there a need to contact Project Manager? Yes / No
a. Was there a need to contact the client? Yes / No
Who was contacted? _____ Date: _____ Time: _____ By: _____

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
1	218518	Yes	N/A	Yes	Plastic Baggie	NP	
2	218519	Yes	N/A	Yes	Plastic Baggie	NP	
3	218520	Yes	N/A	Yes	Plastic Baggie	NP	
4	218521	Yes	N/A	Yes	Plastic Baggie	NP	
5	218522	Yes	N/A	Yes	Plastic Baggie	NP	
6	218523	Yes	N/A	Yes	Plastic Baggie	NP	
7	218524	Yes	N/A	Yes	Plastic Baggie	NP	
8	218525	Yes	N/A	Yes	Plastic Baggie	NP	

2nd Review

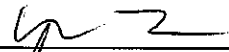
- Were all containers scanned into storage/lab? Initials TD
- Are barcode labels on correct containers? Yes / No
- Are all Flashpoint stickers attached/container ID # circled? Yes / No / NA
- Are all Hex Chrome stickers attached? Yes / No / NA
- Are all QC stickers attached? Yes / No / NA
- Are VOA stickers attached if bubbles noted? Yes / No / NA

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/KPB

ESS Project ID: 21J0518

Date Received: 10/15/2021

Completed By: 

Date & Time: 10-15-21 13:22

Reviewed By: 

Date & Time: 10/15/21 13:29

QC by: _____ Date CC: _____

Analyzed by: _____

Date Analyzed: _____

Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	Birefringence		Chrysolite	Circle Type					Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
														⊥		Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite							
0044	10/12/21	Main Entrance Hallway Clear 12"x12" tile, speckled gray																									
004B		MAIN Hallway NE of Elevator 12"x12" tile speckled gray																									
005A		MAIN Entrance Hallway Asc. 004A																									
005B		Main Entrance Hallway wall ASSC. 004B																									
006A		Main East Hallway wall 3" core Base, Gray																									
006B		Main East Hallway wall wall 3" core Base, Gray																									
007A		Main East Hallway wall 3" core Base, Tan																									
007B		NE-SW Hallway wall 3" Core Base, Tan																									
008A		All Preparation 3" Dark Brn Core Base																									
008B		All Preparation 3" Dark Brown Core Base																									

Comments: Birefringence = less than 0.10. M = 0.1-0.50. H = greater than 0.5. Microscope circle 1. BH-2. 229027, 235000, 231856, Zeiss. 3352010013
 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Ass. % Est.
 Ver 4.7 Updated 05/06/19
 Each layer of multilayered materials are analyzed and charged individually (per NESHAP/EPA).
 Page 2 of 12

Erik Beloff
GZA GeoEnvironmental, Inc., RI
188 Valley St., Suite 300
Providence, RI 02909

November 05, 2021

Dear Erik Beloff,

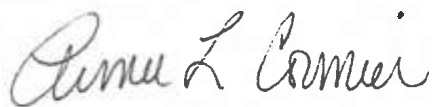
The enclosed analytical results have been obtained by using EPA 600/R-93/116 or EPA 600/M4-82-020. Calibrated Visual Estimate (CVE) is used by Aerobiology for the determination of the percentage of asbestos and other components in the sample. Point Counting is recommended when the sample contains less than 10% asbestos by CVE. Friable materials found to be less than 1% by CVE are automatically point counted (400 points) at no additional charge. Aerobiology recommends further analysis by a gravimetric method for non-friable materials that are less than 1% by CVE.

The Quality Control data related to the samples analyzed is available upon client's written request. Aerobiology Laboratory Associates, Inc., assumes no responsibility for potential sample contamination that may have occurred during the sample collection process or erroneous data provided by the client. As such, these results apply to the sample(s) as received. Unless otherwise indicated, all samples were received in acceptable condition.

The enclosed results may not be used under any circumstances as product endorsement by any US government agency including NIST/NVLAP.

All Laboratory records are retained for at least three years unless otherwise directed in writing by the client. The actual samples are retained for a period of two months and written request is necessary in order to be retained for a longer period of time. All analytical results and records are considered strictly confidential and will not be released under any circumstances to anyone except the actual client. The analytical results included in this report apply only to the items tested. This report may not be reproduced except in its entirety, without the permission of Aerobiology Laboratory Associates, Inc., Laboratory Manager.

If you have any questions please contact the Optical Manager or the Laboratory Manager.
Sincerely,



Aimee Cormier, Laboratory Manager

Enclosure: Version 2
LAB BATCH ID: B 128845 CLIENT PROJECT ID: 34957
Client Ref: Warwick Schools, Wickes
CT ID# PH-0209; MA ID# AA000156; ME ID# LB-055; NVLAP Lab Code 200090-0; RI ID # AAL-093;
VT ID# AL016876

Aerobiology Laboratory Associates, Inc.

Client Name: GZA GeoEnvironmental, Inc., RI
 PO #: N/A
 Client Project #: 34957
 Client Reference: Warwick Schools, Wickes
 Method: EPA/600/R-93/116

Batch: B128845
 Date Sampled: 11/1/2021
 Date Received: 11/3/2021
 Date Analyzed: 11/4/2021
 Date of Report: 11/5/2021

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
054A	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Ceramic Block Wall, Tan Location: Room 5 Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
054B	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Ceramic Block Wall, Tan Location: Room 8 Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
055A	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Grout, Gray assoc. w/054A Location: Room 5 Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
055B	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Grout, Gray assoc. w/054B Location: Room 8 Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
056A	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Ceramic Tile, Light Gray/Green Location: Girls Lavatory, Floor Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
056B	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Ceramic Tile, Light Gray/Green Location: Girls Lavatory, Floor Comments: Is asbestos present? No. Analyzed: Yes														

Aerobiology Laboratory Associates, Inc.

Client Name: GZA GeoEnvironmental, Inc., RI
 PO #: N/A
 Client Project #: 34957
 Client Reference: Warwick Schools, Wickes
 Method: EPA/600/R-93/116

Batch: B128845
 Date Sampled: 11/1/2021
 Date Received: 11/3/2021
 Date Analyzed: 11/4/2021
 Date of Report: 11/5/2021

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
057A	Dk. Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Tile Grout, Dark Gray														
Location: Girls Lavatory, Floor														
Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
057B	Dk. Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Tile Grout, Dark Gray														
Location: Girls Lavatory, Floor														
Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
058A	Multi	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Ceramic Tile, Red														
Location: Boys Lavatory, Floor														
Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
058B	Multi	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Ceramic Tile, Red														
Location: Boys Lavatory, Floor														
Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
059A	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Tile Grout, Dark Gray														
Location: Boys Lavatory, Floor														
Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
059B	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Tile Grout, Dark Gray														
Location: Boys Lavatory, Floor														
Comments: Is asbestos present? No. Analyzed: Yes														

Aerobiology Laboratory Associates, Inc.

Client Name: GZA GeoEnvironmental, Inc., RI
 PO #: N/A
 Client Project #: 34957
 Client Reference: Warwick Schools, Wickes
 Method: EPA/600/R-93/116

Batch: B128845
 Date Sampled: 11/1/2021
 Date Received: 11/3/2021
 Date Analyzed: 11/4/2021
 Date of Report: 11/5/2021

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
060A	White	2	0	0	0	0	0	0	0	0	0	0	0	98
Description: Plaster, White														
Location: Hallway Ceiling, SW														
Comments: Is asbestos present? Yes. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
060B		0	0	0	0	0	0	0	0	0	0	0	0	0
Description: Plaster, White														
Location: Hallway Ceiling, Outside Room 17														
Comments: Analyzed: No														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
060C		0	0	0	0	0	0	0	0	0	0	0	0	0
Description: Plaster, White														
Location: Hallway Ceiling, Outside Room 8														
Comments: Analyzed: No														

Asbestos Codes: CHR = Chrysotile AMO = Amosite CRO = Crocidolite ACT = Actinolite TRE = Tremolite ANT = Anthophyllite
 Non-Asbestos Codes: FBG = Fiber MNW = Mineral Wool CEL = Cellulose HAR = Hair SYN = Synthetic OTH = Other NON = Non-Fibrous Minerals

Note: To create a unique lab sample ID, use the Batch # and the Sample ID (example: [Batch #] - [Sample ID]).

* All results are in percentage.

Analyst: Dan Pine

TAT

(circle one)

2 Days

3 Days

5 Days

Other

TAT in bus. days lab approval required for rush analysis

PAST Batch #

3228 8/15

Client: GZA

PLM

Stop on first positive*: Yes No

If no selection is made, we will analyze all samples

Address: 188 valley St. Suite 300

Chain of Custody

Special Instructions:

Providence RI 02909

Relinquished By: SS 2

Date/Time: 11-1-21 11:00

Project #: 34957 PO:

Received By Lab: Paule Lovitt-Cole

Date/Time: 11-3-21 11:35

Project Site: Warwick Schools - Wickes

Shaded area for lab use only.

Due Date:

Contact: Erik Beloff

of Samples Received: 15

Analyzed: 2 Station 4

Tel. / Fax #: 401-421-4140

Results: email fax verbal

By:

Date:

Email: erik.beloff@gza.com

Analyst: Paule Lovitt-Cole

Date: 11/4/21

QC by / Date: BS / 11/05/21

Sample ID	Date Sampled	Description / Location	Stereo Scope		Optical Properties						RI		Asbestos Percentage (%)						Non-Asbestos Percentage (%)								
			SSAPE	Color	Heterogeneity	Texture	Frangible	Morphology	Extinction	Sign of Engraving	Birefringence	Pleochroism		⊥	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
054A	11-1-21	Rm 5, Ceramic block wall, Tan	0	6	Y	Y	6	NN																			100
054B		Rm 8, Ceramic block wall, Tan	0	6	Y	Y	6	NN																			100
055A		Grout, Tan , Assoc. w/ 054A gray	0	6	Y	Y	6	NN																			10
055B		Grout, Tan , Assoc. w/ 054B gray	0	6	Y	Y	6	NN																			10
056A		Girls, Lav, floor, ceramic tile, gray Lt gray/green	0	6	Y	Y	HN																				100
056B			0	6	Y	Y	HN																				100

Comments: Birefringence L= less than .010, M= .01-.050, H= greater than .05; Microscope circle 1: BH-2 - 229027, 235000, 231856, Zeiss 3352010013

Lab uses the EPA or ELAP point count method as appropriate. SSAPE Stereo Scope Asb. % Est.

QC by: _____ Date QC: _____ Analyzed by: DR Date Analyzed: 11/4/21

Sample ID	Date Sampled	Description / Location	SSAPE	Co or	Homogeneity	Texture	Firable	Morphology	Extinction	Significant	Birefringence	Pleochroism		⊥	Chrysoe	Circle Type				Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
																Amosite	Crocidolite	Tremolite	Anthophyllite							
057A	11-1-21	Girls, Lev, floor, tile grout, dark grey	0	6	Y	6	N																			100
057B		↓	0	6	Y	6	N																			100
058A		Boys Lev, floor, ceramic tile, Red	0	6	Y	6	N																			100
058B		↓	0	6	Y	6	N																			100
059A		Boys Lev, floor, tile grout, dark grey	0	6	Y	6	N																			100
059B		↓	0	6	Y	6	N																			100
060A		Hallway, ceiling, plaster, white, SW	0	W	H	Y	6	Y																		100
060B		Hallway, ceiling, plaster, white, outside RM 17																								100
060C		Hallway, ceiling, plaster, white, outside RM 8																								100

Aerobiology Laboratory Associates, Inc.
22 Cummings Park, Woburn, MA 01801

Telephone: 781-935-3212
Facsimile: 781-932-4857
Email: boston@aerobiology.net

October 27, 2021

Attention: Erik Beloff
GZA GeoEnvironmental, Inc., RI
188 Valley St., Suite 300
Providence, RI 02909

RE: Project site Warwick Schools - Wickes Bldg.

Dear Erik Beloff,

Enclosed please find results for the sample(s) submitted to Aerobiology Laboratory Associates, Inc. on
October 20, 2021 for PLM Bulk.

The analysis was subcontracted to Optimum Analytical, 85 Stiles Road, Suite 201, Salem, NH 03079.

If you have any questions please do not hesitate to call me.

Sincerely,
Aerobiology Laboratory Associates, Inc.



Aimee Cormier
Laboratory Manager



ProScience
ProScience
22 Cummings Park
Woburn MA 01801

Project Reference: SB01616
Laboratory Batch #: 2140470
Date Samples Received: 10/26/2021
Date Samples Analyzed: 10/27/2021
Date of Final Report: 10/27/2021

SAMPLE IDENTIFICATION:

One Hundred Nine (109) samples from SB01616 project were submitted by Client on 10/26/2021

This bulk sample(s) was delivered to Optimum Analytical Consulting, LLC (Optimum) located in Salem, New Hampshire for asbestos content determination.

ANALYTICAL METHOD:

Analytical procedures were performed in accordance with the U.S. Environmental Protection Agency (EPA) Recommended Method for the Determination of Asbestos in Bulk Samples by Polarized Light Microscopy and Dispersion Staining (PLM/DS)(EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials). This report relates only to those samples analyzed, and may not be indicative of other similar appearing materials existing at this, or other sites. Quantification of asbestos content was determined by Calibrated Visual Estimation. Optimum is not responsible for sample collection activities or analytical method limitations. The laboratory is not responsible for the accuracy of results when requested to physically separate and analyze layered samples.

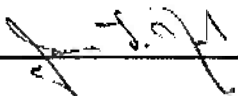
In any given material, fibers with a small diameter (<0.25µm) may not be detected by the PLM method. Floor tile and other resinous bound materials may yield a false negative if the asbestos fibers are too small to be resolved using PLM. Additionally, there is currently no approved EPA analytical method to reliably confirm vermiculite as non-asbestos containing. Additional analytical methods may be required. Optimum Analytical recommends using Transmission Electron Microscopy (TEM) or other approved methods for a more definitive analysis.

Optimum will retain all samples for a minimum of three months. Further analysis or return of samples must be requested within this three month period to guarantee their availability. This report may not be reproduced except in full, without the written approval of Optimum Analytical and Consulting, LLC.


Use of the NVLAP and AIHA Logo in no way constitutes or implies product certification, approval, or endorsement by the National Institute of Standards and Technology or the American Industrial Hygiene Association.

Detection Limit <1%, Reporting Limits: CVES = 1%, 400 Point Count = .25%, 1000 Point Count = 0.1%; Present or Absent are observations made during a qualitative analysis.

This report is considered preliminary until signed by both the Laboratory Analyst and Laboratory Director or Supervisor. If you have any questions regarding this report, please do not hesitate to contact us.



Jamie L. Noel
Laboratory Director



Kristina Scaviola
Laboratory Supervisor



OPTIMUM

Analytical and Consulting, LLC

85 Stiles Road, Suite 201, Salem, NH 03079 Phone: (603)-458-5247

CLIENT: ProScience
ADDRESS: 22 Cummings Park
CITY / STATE / ZIP: Woburn MA 01801
CONTACT: ProScience
DESCRIPTION: PLM Analysis
LOCATION: SB01616

BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
PROJECT #: SB01616
DATE COLLECTED: 10/12/2021
COLLECTED BY: Client
DATE RECEIVED: 10/26/2021
ANALYSIS DATE: 10/27/2021
REPORT DATE: 10/27/2021
ANALYST: Jamie Noel

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-001 001A	Main Entrance Hallway Ceiling 1'x1' Ceiling Tile, Brown/White	LAYER 1 100%	None Detected	Cellulose Fiber 95% Binder/Filler 5%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-002 001B	NE-SW Hallway Ceiling 1'x1' Ceiling Tile, Brown/White	LAYER 1 100%	None Detected	Cellulose Fiber 95% Binder/Filler 5%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-003 002A	Main Entrance Hallway Ceiling Glue Daubs, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-004 002B	NE-SW Hallway Ceiling Glue Daubs, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-005 003A	Main Entrance Hallway 2'x4' Ceiling Tile, Gray/White	LAYER 1 100%	None Detected	Cellulose Fiber 65% Fibrous Glass 15% Binder/Filler 20%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-006 003B	NW-SE Hallway 2'x4' Ceiling Tile, Gray/White	LAYER 1 100%	None Detected	Cellulose Fiber 65% Fibrous Glass 15% Binder/Filler 20%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-007 004A	Main Entrance Hallway 12"x12" Tile, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-008 004B	Hallway NE-SW Floor 12"x12" Tile, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%



OPTIMUM

Analytical and Consulting, LLC

85 Stiles Road, Suite 201, Salem, NH 03079 Phone: (603)-458-5247

CLIENT: ProScience
ADDRESS: 22 Cummings Park
CITY / STATE / ZIP: Woburn MA 01801
CONTACT: ProScience
DESCRIPTION: PLM Analysis
LOCATION: SB01616

BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-800/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
PROJECT #: SB01616
DATE COLLECTED: 10/12/2021
COLLECTED BY: Client
DATE RECEIVED: 10/26/2021
ANALYSIS DATE: 10/27/2021
REPORT DATE: 10/27/2021
ANALYST: Jamie Noel

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-009 005A	Main Entrance Hallway Mastic, Tan	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-010 005B	Hallway NE-SW Floor Mastic, Tan	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-011 006A	Main Entrance Hallway Wall 3" Cove Base, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-012 006B	Main Entrance NE-SW Hallway Wall 3" Cove Base, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-013 007A	Main Entrance Hallway Wall 3" Cove Base Mastic, Tan	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-014 007B	NE-SW Hallway Wall 3" Cove Base Mastic, Tan	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-015 008A	N/A All Purpose 3" Cove Base, Dark Brown	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-016 008B	N/A All Purpose 3" Cove Base, Dark Brown	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%



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BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
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ANALYST: Jamie Noel

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-017 009A	N/A All Purpose 3" Cove Base Mastic, Tan	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-018 009B	N/A All Purpose 3" Cove Base Mastic, Tan	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-019 010A	APM, Closet Floor 9" x 9" Tile, Blue	LAYER 1 100%	Chrysotile 5%	Cellulose Fiber 1% Binder/Filler 94%
Total % Asbestos:			5.0%	Total % Non-Asbestos: 95.0%
2140470-020 010B	APM, Closet Floor 9" x 9" Tile, Blue Note: Positive Stop	LAYER 1 100%		
2140470-021 011A	APM, Closet Floor Mastic, Black	LAYER 1 100%	Chrysotile 3%	Cellulose Fiber 1% Binder/Filler 96%
Total % Asbestos:			3.0%	Total % Non-Asbestos: 97.0%
2140470-022 011B	APM, Closet Floor Mastic, Black Note: Positive Stop	LAYER 1 100%		
2140470-023 012A	N/A 9x9 Kitchen Counter Tile, Green	LAYER 1 100%	Chrysotile 3%	Cellulose Fiber 1% Binder/Filler 96%
Total % Asbestos:			3.0%	Total % Non-Asbestos: 97.0%
2140470-024 012B	N/A 9x9 Kitchen Counter Tile, Green Note: Positive Stop	LAYER 1 100%		



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BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

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REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
2140470-025 013A	N/A Mastic, Black	LAYER 1 100%	Chrysotile	2%	Cellulose Fiber Binder/Filler	1% 97%
Total % Asbestos:				2.0%	Total % Non-Asbestos: 98.0%	
2140470-026 013B	N/A Mastic, Black Note: Positive Stop	LAYER 1 100%				
2140470-027 014A	Kitchen Sink, Anti-Condensate, Black	LAYER 1 100%	Chrysotile	5%	Cellulose Fiber Binder/Filler	2% 93%
Total % Asbestos:				5.0%	Total % Non-Asbestos: 95.0%	
2140470-028 014B	Kitchen Sink, Anti-Condensate, Black Note: Positive Stop	LAYER 1 100%				
2140470-029 015A	Courtyard Windows Exterior Window Glazing, White/Black	LAYER 1 100%	Chrysotile	2%	Cellulose Fiber Binder/Filler	1% 97%
Total % Asbestos:				2.0%	Total % Non-Asbestos: 98.0%	
2140470-030 015B	Courtyard Windows Exterior Window Glazing, White/Black Note: Positive Stop	LAYER 1 100%				
2140470-031 016A	NW-SE Hallway Ceiling Plaster, White/Beige	LAYER 1 100%	Chrysotile	3%	Cellulose Fiber Binder/Filler	1% 96%
Total % Asbestos:				3.0%	Total % Non-Asbestos: 97.0%	
2140470-032 016B	NW-SE Hallway Ceiling Plaster, White/Beige Note: Positive Stop	LAYER 1 100%				
2140470-033 017A	Room 6 Entryway Wall Wall Plaster, White	LAYER 1 100%	None Detected		Cellulose Fiber Binder/Filler	1% 99%
Total % Asbestos:				No Asbestos Detected	Total % Non-Asbestos: 100.0%	



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BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

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Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-034 017B	Room 6 Entryway Wall Wall Plaster, White	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-035 018A	Room 6 Entryway Wall Wallboard, Gray/Brown	LAYER 1 100%	None Detected	Cellulose Fiber 10% Binder/Filler 90%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-036 018B	Room 6 Entryway Wall Wallboard, Gray/Brown	LAYER 1 100%	None Detected	Cellulose Fiber 10% Binder/Filler 90%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-037 019A	Speech Room Chalkboard Glue Daubs, Black	LAYER 1 100%	Chrysotile 8%	Cellulose Fiber 1% Binder/Filler 91%
Total % Asbestos:			8.0%	Total % Non-Asbestos: 92.0%
2140470-038 019B	Speech Room Chalkboard Glue Daubs, Black Note: Positive Stop	LAYER 1 100%		
2140470-039 020A	Room 4 (Ant.) 3" Wall Cove Base, Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-040 020B	Room 4 (Ant.) 3" Wall Cove Base, Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-041 021A	Room 4 (Ant.) 3" Wall Cove Base Mastic, White	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%



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BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

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Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-042 021B	Room 4 (Ant.) 3" Wall Cove Base Mastic, White	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-043 022A	SE Hall Adj. to Room 1-4 Plaster, White	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-044 022B	SE Hall Adj. to Room 1-4 Plaster, White	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-045 023A	SE Hall Adj. to Room 1-4 1/4" Wallboard, White/Brown	LAYER 1 100%	None Detected	Cellulose Fiber 10% Binder/Filler 90%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-046 023B	SE Hall Adj. to Room 1-4 1/4" Wallboard, White/Brown	LAYER 1 100%	None Detected	Cellulose Fiber 10% Binder/Filler 90%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-047 024A	SE Hall Adj. to Room 1-4 Acoustical Ceiling, Gray/Brown	LAYER 1 100%	None Detected	Cellulose Fiber 20% Binder/Filler 80%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-048 024B	SE Hall Adj. to Room 1-4 Acoustical Ceiling, Gray/Brown	LAYER 1 100%	None Detected	Cellulose Fiber 20% Binder/Filler 80%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-049 025A	SE Hall Adj. to Room 1-4 Fiberglass Pipe Insulation, Yellow/Beige/Silver	LAYER 1 100%	None Detected	Cellulose Fiber 10% Fibrous Glass 85% Binder/Filler 5%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%



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BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
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REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-050 025B	SE Hall Adj. to Room 1-4 Fiberglass Pipe Insulation, Yellow/Beige/Silver	LAYER 1 100%	None Detected	Cellulose Fiber 10% Fibrous Glass 85% Binder/Filler 5%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-051 025C	SE Hall Adj. to Room 1-4 Fiberglass Pipe Insulation, Yellow/Beige/Silver	LAYER 1 100%	None Detected	Cellulose Fiber 10% Fibrous Glass 85% Binder/Filler 5%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-052 026A	Room 20 Cork Board, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 2% Binder/Filler 98%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-053 026B	Room 20 Cork Board, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 2% Binder/Filler 98%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-054 027A	Room 20 Linoleum, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 45% Binder/Filler 55%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-055 027B	Room 20 Linoleum, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 45% Binder/Filler 55%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-056 028A	Room 20 Mastic, Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-057 028B	Room 20 Mastic, Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%



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BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

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REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-058 029A	Room 20 Surfacing Material on Window Shelf, Red	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-059 029B	Room 20 Surfacing Material on Window Shelf, Red	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-060 030A	Room 20 Mastic (Appears to be Felt Paper), Black Note: Mastic not present.	LAYER 1 100%	None Detected	Cellulose Fiber 85% Binder/Filler 15%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-061 030B	Room 20 Mastic (Appears to be Felt Paper), Black Note: Mastic not present.	LAYER 1 100%	None Detected	Cellulose Fiber 85% Binder/Filler 15%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-062 031A	Room 20 Interior Window Caulk, Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-063 031B	Room 20 Interior Window Caulk, Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-064 032A	Room 22, Exit to Room 21 Interior Wall Joint Caulk, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%



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Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-065 032B	Room 22, Exit to Room 21 Interior Wall Joint Caulk, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-066 033A	NW-SE Hall Small Section Adj. Room 22/23 Exit Door Joint Caulk, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 5% Binder/Filler 95%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-067 033B	NW-SE Hall Small Section Adj. Room 22/23 Exit Door Joint Caulk, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 5% Binder/Filler 95%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-068 034A	NE-SW Hall, between Restroom Sink, Adj. Room 20 Panel Mastic, Tan	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-069 034B	NE-SW Hall, between Restroom Sink, Adj. Room 20 Panel Mastic, Tan	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-070 035A	Auditorium Hall, Wall 3" Cove Base, Blue	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-071 035B	Auditorium Hall, Wall 3" Cove Base, Blue	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%



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Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-072 036A	Auditorium Hall Mastic, Tan	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-073 036B	Auditorium Hall Mastic, Tan	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-074 037A	Gymnasium 12" X 12" Floor Tile, Light Tan	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-075 037B	Auditorium Hallway 12" X 12" Floor Tile, Light Tan	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-076 038A	Gymnasium Mastic, Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-077 038B	Auditorium Hallway Mastic, Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-078 039A	Gymnasium Acoustical Ceiling, Red/Tan	LAYER 1 100%	None Detected	Cellulose Fiber 75% Binder/Filler 25%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-079 039B	Gymnasium Acoustical Ceiling, Red/Tan	LAYER 1 100%	None Detected	Cellulose Fiber 75% Binder/Filler 25%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%



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CLIENT: ProScience
ADDRESS: 22 Cummings Park
CITY / STATE / ZIP: Woburn MA 01801
CONTACT: ProScience
DESCRIPTION: PLM Analysis
LOCATION: SB01616

BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
PROJECT #: SB01616
DATE COLLECTED: 10/12/2021
COLLECTED BY: Client
DATE RECEIVED: 10/26/2021
ANALYSIS DATE: 10/27/2021
REPORT DATE: 10/27/2021
ANALYST: Jamie Noel

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-080 040A	Auditorium Hallway 2'x2' Ceiling Tile, White/Gray	LAYER 1 100%	None Detected	Cellulose Fiber 65% Fibrous Glass 15% Binder/Filler 20%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-081 040B	Auditorium Hallway 2'x2' Ceiling Tile, White/Gray	LAYER 1 100%	None Detected	Cellulose Fiber 65% Fibrous Glass 15% Binder/Filler 20%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-082 041A	Auditorium Ceiling Plaster, White	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-083 041B	Auditorium Ceiling Plaster, White	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-084 042A	Auditorium Hall/Gym Exterior Vertical Joint Caulk, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-085 042B	Auditorium Hall/Gym Exterior Vertical Joint Caulk, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-086 043A	N/A Bulk Material, Gray/Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-087 043B	N/A Bulk Material, Gray/Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%



OPTIMUM

Analytical and Consulting, LLC

85 Stiles Road, Suite 201, Salem, NH 03079 Phone: (603)-458-5247

CLIENT: ProScience
ADDRESS: 22 Cummings Park
CITY / STATE / ZIP: Woburn MA 01801
CONTACT: ProScience
DESCRIPTION: PLM Analysis
LOCATION: SB01616

BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
PROJECT #: SB01616
DATE COLLECTED: 10/12/2021
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DATE RECEIVED: 10/26/2021
ANALYSIS DATE: 10/27/2021
REPORT DATE: 10/27/2021
ANALYST: Jamie Noel

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-088 044A	Main Entrance, Metal Canopy Metal Mastic, White/Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-089 044B	Main Entrance, Metal Canopy Metal Mastic, White/Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-090 045A	Exterior, between Room 17 and 9 Exterior Window Glazing, White/Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-091 045B	Exterior, between Room 17 and 9 Exterior Window Glazing, White/Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-092 046A	South Roof Field Tar & Gravel Felt Layers, Black	LAYER 1 100%	None Detected	Cellulose Fiber 65% Binder/Filler 35%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-093 046B	South Roof Field Tar & Gravel Felt Layers, Black	LAYER 1 100%	None Detected	Cellulose Fiber 65% Binder/Filler 35%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-094 047A	Roof Seam Sealant, Black/Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-095 047B	Roof Seam Sealant, Black/Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%



OPTIMUM

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CLIENT: ProScience
ADDRESS: 22 Cummings Park
CITY / STATE / ZIP: Woburn MA 01801
CONTACT: ProScience
DESCRIPTION: PLM Analysis
LOCATION: SB01616

BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
PROJECT #: SB01616
DATE COLLECTED: 10/12/2021
COLLECTED BY: Client
DATE RECEIVED: 10/26/2021
ANALYSIS DATE: 10/27/2021
REPORT DATE: 10/27/2021
ANALYST: Jamie Noel

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-096 048A	Roof Vent Pipe Sealant, Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-097 048B	Roof Vent Pipe Sealant, Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-098 049A	Roof, Entry Hall and Auditorium Horizontal Flashing Caulk, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-099 049B	Roof, Entry Hall and Auditorium Horizontal Flashing Caulk, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-100 050A	Roof Metal Flashing Caulk, Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-101 050B	Roof Metal Flashing Caulk, Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-102 051A	Roof, Main Entrance Felt Layers, Black	LAYER 1 100%	None Detected	Cellulose Fiber 45% Fibrous Glass 15% Binder/Filler 40%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-103 051B	Roof, Main Entrance Felt Layers, Black	LAYER 1 100%	None Detected	Cellulose Fiber 45% Fibrous Glass 15% Binder/Filler 40%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%



OPTIMUM

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CLIENT: ProScience
ADDRESS: 22 Cummings Park
CITY / STATE / ZIP: Woburn MA 01801
CONTACT: ProScience
DESCRIPTION: PLM Analysis
LOCATION: SB01616

BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
PROJECT #: SB01616
DATE COLLECTED: 10/12/2021
COLLECTED BY: Client
DATE RECEIVED: 10/26/2021
ANALYSIS DATE: 10/27/2021
REPORT DATE: 10/27/2021
ANALYST: Jamie Noel

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-104 052A	Roof NW Rubber 2 Layers and ISO (Sample is felt paper), Black	LAYER 1 100%	None Detected	Cellulose Fiber 65% Binder/Filler 35%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-105 052B	Roof Tar and Gravel Felt Layers, Black	LAYER 1 100%	None Detected	Cellulose Fiber 65% Binder/Filler 35%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-106 053A	Roof NW Roof Insulation, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-107 053B	Roof Roof Insulation, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-108 054A	NE End Roof, Seam Sealant, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-109 054B	NE End Roof, Seam Sealant, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%

**Analyst
Signatory:**
Jamie Noel



TAT (circle one)
 3 Hours 6 Hours Same Day Next Day
 2 Days 3 Days 5 Days Other
 TAT in this days - lab approval required for such analysis
PASI Batch # 8128685

PLM

Stop on first positive: Yes No
 analyze all samples

Client: G-24 Geoenvironmental
 Address: 188 Valley Street, Suite 300
 Providence RI, 02909
 Project #: 34957.00 PO: -
 Project Site: Wawmick Schools: Wickes Bldg.
 Contact: Eric Beloff
 Tel / Fax #: 401-230-8747
 Email: evk.beloff@gza.com
 Relinquished By: _____ Date/Time: _____
 Received By Lab: Stephanie Bennett Date/Time: 10/20/21 2:05
 Shaded area for lab use only.
 # of Samples Received: 109 Analyzed: _____
 Results: email fax verbal By: _____ Date: _____
 Analyst / Date: _____ QC by / Date: _____

Sample ID	Date Sampled	Description / Location	Stereo Scope				Optical Properties				RI	Asbestos Percentage (%)						Non Asbestos Percentage (%)								
			SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation		Birefringence	Pleochroism	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
001A	10/12/21	Main Entrance hallway ceiling, 11'x11' ceiling tile, white, Alabaster ceiling																								
001D		NE-SW hallway ceiling, tile, 11'x11', white.																								
002A		Main entrance hallway ceiling, Glue slabs, Brown, ASSC. 001A																								
002B		NE-SW, Hallway ceiling tile, 11'x11', white																								
003A		Main entrance hallway 21'x41' ceiling tile, white																								
003B		NW-SW hallway, ceiling tile, 21'x41', white																								

Proscience Analytical Services, Inc. www.proscience.net
 22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

Customer Name:

624

Project Name/No.:

3495700

PAS1 Batch #

5B01616

188685

OC by: _____ Date OC: _____ Analyzed by: _____ Date Analyzed: _____

Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	=	T	Circle Type											
															Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other
004A	10/12/21	Man - Dantone Hallway Clear 12"x12" tile, speckled Gray																								
004B		Man Hallway NE section 12"x12" tile speckled Gray																								
005A		Man Mustke yellow Assc. 004A																								
005B		Mustke, Yellow Assc. 004B																								
006A		Man East. Hallway wall 3" core Base, Gray																								
006B		Man East. NE-SW Hallway wall 3" core Base, Gray																								
007A		Man East Hallway wall 3" core Base, Tan																								
007B		NE-SW Hallway wall 3" Core Base, Tan																								
008A		All Pulpal 2" Dark Brn Core Base																								
008B		All Pulpal 3" Dark Brown Core Base																								

Comments: Birefringence L= less than 0.10, H= 0.1-0.50, H= greater than .05, Microscope circle 1: 9Hx2 - 230027, 235000, 231856, 2485 - 3352010013
 Lab uses the EPA or ELAF point count method as appropriate. SSAPE = Stereo Scope Ass. % Est.
 ver 4.7 Updated 05/06/19 Each layer of multilayered materials are analyzed and charged individually (per NESHA/EPA).
 Page 2 of 12

QC by:

Date QC:

Analyzed by:

Date Analyzed:

Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism		⊥	Chrysotile	Circle Type					Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous	
																Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite								
028B	10/2/21	↓ Room 20, Survey Material on window sills, Red																										
029A		↓ Room 20, Survey Material on window sills, Red																										
029B		↓ Assc. 029: Mixture, Black																										
030A		↓ Interior window caulk, Black, (Room 20)																										
030B		↓ Room 22, Exit to Room 21, Interior wall Joint Caulk between Joint and Doorframe																										
031B		↓ NW-SE Hall, Small Section Adj. Room 22/23, Exit Door Joint Caulk, Joint and Door frame																										
032A																												
032B																												
033A																												

Comments: Birefringence L = less than 0.0; M = 0.0-0.50; H = greater than 0.5; Microscope circle 1: BH-2 - 239027; 235000; 231856; 2855 - 3352010013
 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Ass. % Est.
 ver 4.7 Updated 05/06/19 Each layer of multilayered materials are analyzed and charged individually (per NESHAP/EPA). Page 2 of 12

Customer Name: **62A**
 Project Name/#: **34957.00**

PAS1 Batch # **19128685**

3801616

OC by: _____ Date OC: _____ Analyzed by: _____ Date Analyzed: _____

Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism		⊥	Chrysotile	Circle Type					Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous	
																Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite								
03313	10/12/21																											
0344A		NE-SW Hall, between Post-room Sink, Panel Masker, Adj. room 20, Tan																										
0341B																												
0354A		Auditorium Hall, Wall, 3" Core Base Blue																										
03513																												
0364A		Assoc. 035: Masker, Tan																										
03613																												
0374A		Gymnasium, floor tile, 12" x 12", light tan, speckled																										
03713		Auditorium hallway, floor tile, 12" x 12", light tan, speckled																										
0384A		Assoc. 037A: Masker, Black																										

Comments: Birefringence \leq less than 0.10, M_u 01-050, H_u greater than 0.5, Microscope circle 1, BH-2 - 229027, 235006, 231856, Zeiss - 3352010013
 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Abb % Est.
 ver 4.7 Updated 05/06/19 Each layer of multilayered materials are analyzed and charged individually (per NESHAP/EPA). Page 8 of 12

Customer Name:

6-2-A

PAS1 Batch #

Project Name/#:

34957-02

188685

SB01614

QC by:

Date QC:

Analyzed by:

Date Analyzed:

Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism		⊥	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
03813	10/14/21	Assoc. 03713: Must-2, Black																									
03913		Gymnasium wall, Acoustical tile, Dead																									
04013		Auditorium hallway, 2'x2' ceiling tile, white, large indist																									
04113		Auditorium ceiling plaster, white																									
04213		Auditorium Hall/Gym - Extent Vertical Joint Caulk in between Panels.																									
04313																											

Comments: Birefringence L_v less than 0.10, M_v 0.1-0.50, H_v greater than .05; Microscope circle 1. BH-2 - 239027, 235000, 231856, Zaxis - 3852010013
 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope App. % Est.
 ver 4.7 Updated 05/06/19
 Each layer of multilayered materials are analyzed and charged individually (per NESHAPEPA).
 Page 9 of 12

Customer Name: G-24
 Project Name/#: 34957-02

PAS1 Batch # B128685

SB01610

QC by:

Date QC:

Analyzed by:

Date Analyzed:

Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism		⊥	Chrysotile	Circle Type					Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
																Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite							
053 B	10/2/21	↓																									
054 A		↑ North 1 Seam Sealant + Gray, NE end.																									
054 B		↓																									



OPTIMUM

Analytical and Consulting, LLC

85 Stiles Road, Suite 201, Salem, NH 03079 Phone: (603)-458-5247

CLIENT: ProScience
ADDRESS: 22 Cummings Park
CITY / STATE / ZIP: Woburn MA 01801
CONTACT: ProScience
DESCRIPTION: PLM Analysis
LOCATION: SB01616

BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
PROJECT #: SB01616
DATE COLLECTED: 10/12/2021
COLLECTED BY: Client
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ANALYSIS DATE: 10/27/2021
REPORT DATE: 10/27/2021
ANALYST: Jamie Noel

Acrobiology 22 Cummings Park, Woburn, MA 01801 T: 781-458-5247 F: 781-458-4857 jamie@acrobiology.com **PLM COC 1.1**

Client: Acrobiology Laboratory/Associates, Inc.
 Address: 22 Cummings Park, Woburn MA 01801
 P.O. #: SB01616

Contact: Donovan Townsend
 Phone: 781-935-9312
 Email: tdonovan@acrobiology.com

Received By: [Signature] Date/Time: 10/27/21 8:4

Analysis: PLM COC 1.1
 Lab Code: 101433-0
 Method: EPA 800
 Test: EPA 800
 Special Instructions: None on File
 TML: 10/27/2021
 POC: JNO

Line #	Sample ID	Date Collected	Description	Location
1	001A	10/12/2021	1st Ceiling Tile above Drop Ceiling, White	Main Entrance Lobby Ceiling
2	001B	10/12/2021	1st Ceiling Tile above Drop Ceiling, White	NE 5th Lobby Ceiling
3	002A	10/12/2021	2nd Ceiling Tile above Drop Ceiling, White	Main Entrance Lobby Ceiling
4	002B	10/12/2021	2nd Ceiling Tile, White	Main Entrance Lobby
5	003A	10/12/2021	3rd Ceiling Tile, White	Main Entrance Lobby
6	003B	10/12/2021	3rd Ceiling Tile, White	Main Entrance Lobby
7	004A	10/12/2021	1st Ceiling Tile, White	Main Entrance Lobby
8	004B	10/12/2021	1st Ceiling Tile, White	Main Entrance Lobby
9	005A	10/12/2021	1st Ceiling Tile, White	Main Entrance Lobby
10	005B	10/12/2021	1st Ceiling Tile, White	Main Entrance Lobby
11	006A	10/12/2021	1st Ceiling Tile, White	Main Entrance Lobby
12	006B	10/12/2021	1st Ceiling Tile, White	Main Entrance Lobby
13	007A	10/12/2021	1st Ceiling Tile, White	Main Entrance Lobby
14	007B	10/12/2021	1st Ceiling Tile, White	Main Entrance Lobby
15	008A	10/12/2021	1st Ceiling Tile, White	Main Entrance Lobby
16	008B	10/12/2021	1st Ceiling Tile, White	Main Entrance Lobby

Notes: All samples are Bulk Samples. All samples will be analyzed and changed to PLM COC 1.1. PLM COC 1.1 is not analyzed as samples.



OPTIMUM

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CLIENT: ProScience
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 CITY / STATE / ZIP: Woburn MA 01801
 CONTACT: ProScience
 DESCRIPTION: PLM Analysis
 LOCATION: SB01616

BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
 PROJECT #: SB01616
 DATE COLLECTED: 10/12/2021
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 REPORT DATE: 10/27/2021
 ANALYST: Jamie Noel

PLM #	Sample ID	Location	Room
16	0280 ✓	10/12/2021	All Purpose 2' Tall Green Coat Room
17	0280 ✓	10/12/2021	All Purpose Room 1' Wall Coat Room Inside Top Area - 0280
18	0280 ✓	10/12/2021	All Purpose Room 2' Wall Coat Room Inside Top Area - 0280
19	010A ✓	10/12/2021	9'x9' Tile Base
20	010B ✓	10/12/2021	9'x9' Tile Base
21	011A ✓	10/12/2021	Assoc. 50A Book Storage
22	011B ✓	10/12/2021	Assoc. 100 Book Storage
23	012A ✓	10/12/2021	Kitchen Counter Top 9'x9' Green
24	012B ✓	10/12/2021	Kitchen Counter Top 9'x9' Green
25	013A ✓	10/12/2021	Assoc. 120 Book Storage
26	013B ✓	10/12/2021	Assoc. 120 Book Storage
27	014A ✓	10/12/2021	5' x 5' x 5' White-Ceramic Tiles
28	014B ✓	10/12/2021	5' x 5' x 5' White-Ceramic Tiles
29	014A ✓	10/12/2021	Entire Window Cladding Oak Brown/Vinyl
30	015B ✓	10/12/2021	Entire Window Cladding Oak Brown/Vinyl
31	016A ✓	10/12/2021	Ceiling Panel White
32	016B ✓	10/12/2021	Ceiling Panel White
33	017A ✓	10/12/2021	WALL PAPER, WHITE
34	017B ✓	10/12/2021	WALL PAPER, WHITE
35	018A ✓	10/12/2021	WALLPAPER, WHITE
36	018B ✓	10/12/2021	WALLPAPER, WHITE
37	019A ✓	10/12/2021	Chiselhead Oak Chair, Back
38	019B ✓	10/12/2021	Chiselhead Oak Chair, Back

PLM #s 011-019 are 1/2 Unlabeled Samples. Each type of unlabeled sample will be analyzed and charged individually per NESHAP/MSHA. 10/26/2021

Acrobiology 22 Cummings Park Woburn, MA 01891 T: 781-458-5247 F: 781-592-4467 info@acrobiology.com
 PLM COC # 5901616
 PASI Batch # SB01616



OPTIMUM

Analytical and Consulting LLC

85 Stiles Road, Suite 201, Salem, NH 03079 Phone: (603)-458-5247

CLIENT: ProScience
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 CITY / STATE / ZIP: Woburn MA 01801
 CONTACT: ProScience
 DESCRIPTION: PLM Analysis
 LOCATION: SB01616

BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
 PROJECT #: SB01616
 DATE COLLECTED: 10/12/2021
 COLLECTED BY: Client
 DATE RECEIVED: 10/26/2021
 ANALYSIS DATE: 10/27/2021
 REPORT DATE: 10/27/2021
 ANALYST: Jamie Noel

PLM Notes	Project #	PLM COC #	PAST Batch #	
	SB01616		SB01616	
30	020A ✓	10/12/2021	3" x 4" Core Base, Blue	Room 4 (RM 4)
40	020B ✓	10/12/2021	3" x 4" Core Base, Blue	Room 4 (RM 4)
41	021A ✓	10/12/2021	Asstic, 20x White Lamin	Room 4 (RM 4)
42	021B ✓	10/12/2021	Asstic, 20x White Lamin	Room 4 (RM 4)
43	022A ✓	10/12/2021	White Primer	SE Hall, RM 14
44	022B ✓	10/12/2021	White Primer	SE Hall, RM 14
45	023A ✓	10/12/2021	White 1/2" Veneerboard	SE Hall, RM 14
46	023B ✓	10/12/2021	White 1/2" Veneerboard	SE Hall, RM 14
47	024A ✓	10/12/2021	Acoustical Ceiling, Gray	SE Hall, RM 14
48	024B ✓	10/12/2021	Acoustical Ceiling, Gray	SE Hall, RM 14
49	025A ✓	10/12/2021	Emulsion Pipe Insulation, Yellow	SE Hall, RM 14
50	025B ✓	10/12/2021	Emulsion Pipe Insulation, Yellow	SE Hall, RM 14
51	026C ✓	10/12/2021	Emulsion Pipe Insulation, Yellow	SE Hall, RM 14
52	026A ✓	10/12/2021	Core Board, Green	Room 20
53	026B ✓	10/12/2021	Core Board, Green	Room 20
54	027A ✓	10/12/2021	Emulsion Veneer Board Surface, Tan/Red Pigment	Room 20
56	027B ✓	10/12/2021	Emulsion Veneer Board Surface, Tan/Red Pigment	Room 20
56	028A ✓	10/12/2021	Asstic, 27" x 48", Core Board	Room 20
57	028B ✓	10/12/2021	Asstic, 27" x 48", Core Board	Room 20
58	029A ✓	10/12/2021	Emulsion Veneer Board Surface, Tan/Red Pigment	Room 20
58	029B ✓	10/12/2021	Emulsion Veneer Board Surface, Tan/Red Pigment	Room 20
59	030A ✓	10/12/2021	Asstic, 27" x 48", Core Board	Room 20
60	030B ✓	10/12/2021	Asstic, 27" x 48", Core Board	Room 20
61	030C ✓	10/12/2021	Asstic, 27" x 48", Core Board	Room 20

PLM notes per 42 Version 2/016 Each layer of multiplexed samples will be analyzed and changed individually per 02/24/2021/PA. *OK 10/11/21, JN* Page 3 of 5



OPTIMUM

Analytical and Consulting, LLC

85 Stiles Road, Suite 201, Salem, NH 03079 Phone: (603)-458-5247

CLIENT: ProScience
 ADDRESS: 22 Cummings Park
 CITY / STATE / ZIP: Woburn MA 01801
 CONTACT: ProScience
 DESCRIPTION: PLM Analysis
 LOCATION: SB01616

BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
 PROJECT #: SB01616
 DATE COLLECTED: 10/12/2021
 COLLECTED BY: Client
 DATE RECEIVED: 10/26/2021
 ANALYSIS DATE: 10/27/2021
 REPORT DATE: 10/27/2021
 ANALYST: Jamie Noel

Req. Name	Req. #	PLM CDC #	PAST BATCH #
62 001A ✓	10122001	Room 20	
63 001B ✓	10122001	Room 20	
64 002A ✓	10122001	Room 22, 20a to Room 21	
65 002B ✓	10122001	Room 22, 20a to Room 21	
66 003A ✓	10122001	Room 22, 20a to Room 21	
67 003B ✓	10122001	Room 22, 20a to Room 21	
68 004A ✓	10122001	Room 22, 20a to Room 21	
69 004B ✓	10122001	Room 22, 20a to Room 21	
70 005A ✓	10122001	Room 22, 20a to Room 21	
71 005B ✓	10122001	Room 22, 20a to Room 21	
72 006A ✓	10122001	Room 22, 20a to Room 21	
73 006B ✓	10122001	Room 22, 20a to Room 21	
74 007A ✓	10122001	Room 22, 20a to Room 21	
75 007B ✓	10122001	Room 22, 20a to Room 21	
76 008A ✓	10122001	Room 22, 20a to Room 21	
77 008B ✓	10122001	Room 22, 20a to Room 21	
78 009A ✓	10122001	Room 22, 20a to Room 21	
79 009B ✓	10122001	Room 22, 20a to Room 21	
80 00A ✓	10122001	Room 22, 20a to Room 21	
81 00B ✓	10122001	Room 22, 20a to Room 21	
82 00A ✓	10122001	Room 22, 20a to Room 21	
83 00B ✓	10122001	Room 22, 20a to Room 21	
84 00A ✓	10122001	Room 22, 20a to Room 21	
85 00B ✓	10122001	Room 22, 20a to Room 21	

PLM batch per 2 Update 2021. Each type of methodology samples will be analyzed and changed individually per methodology. 10/27/21 Page 4 of 8



OPTIMUM

Analytical and Consulting, LLC

85 Stiles Road, Suite 201, Salem, NH 03079 Phone: (603)-458-5247

CLIENT: ProScience
ADDRESS: 22 Cummings Park
CITY / STATE / ZIP: Woburn MA 01801
CONTACT: ProScience
DESCRIPTION: PLM Analysis
LOCATION: SB01616

BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
PROJECT #: SB01616
DATE COLLECTED: 10/12/2021
COLLECTED BY: Client
DATE RECEIVED: 10/26/2021
ANALYSIS DATE: 10/27/2021
REPORT DATE: 10/27/2021
ANALYST: Jamie Noel

Proj. Name	Proj. #	PLM LOC. #	PASI Batch #
Aerobiology	22 Cummings Park, Woburn, MA 01801 T: 781-931-5113 F: 781-931-489 jnoel@optimum.com		
01	0028 ✓	10/12/2021	Vertical Joint Crack in between Bricks
02	0029 ✓	10/12/2021	Brick
03	0030 ✓	10/12/2021	Brick
04	0031 ✓	10/12/2021	Brick
05	0032 ✓	10/12/2021	Brick
06	0033 ✓	10/12/2021	Brick
07	0034 ✓	10/12/2021	Brick
08	0035 ✓	10/12/2021	Brick
09	0036 ✓	10/12/2021	Brick
10	0037 ✓	10/12/2021	Brick
11	0038 ✓	10/12/2021	Brick
12	0039 ✓	10/12/2021	Brick
13	0040 ✓	10/12/2021	Brick
14	0041 ✓	10/12/2021	Brick
15	0042 ✓	10/12/2021	Brick
16	0043 ✓	10/12/2021	Brick
17	0044 ✓	10/12/2021	Brick
18	0045 ✓	10/12/2021	Brick
19	0046 ✓	10/12/2021	Brick
20	0047 ✓	10/12/2021	Brick
21	0048 ✓	10/12/2021	Brick
22	0049 ✓	10/12/2021	Brick
23	0050 ✓	10/12/2021	Brick
24	0051 ✓	10/12/2021	Brick
25	0052 ✓	10/12/2021	Brick
26	0053 ✓	10/12/2021	Brick
27	0054 ✓	10/12/2021	Brick
28	0055 ✓	10/12/2021	Brick
29	0056 ✓	10/12/2021	Brick
30	0057 ✓	10/12/2021	Brick
31	0058 ✓	10/12/2021	Brick
32	0059 ✓	10/12/2021	Brick
33	0060 ✓	10/12/2021	Brick
34	0061 ✓	10/12/2021	Brick
35	0062 ✓	10/12/2021	Brick
36	0063 ✓	10/12/2021	Brick
37	0064 ✓	10/12/2021	Brick
38	0065 ✓	10/12/2021	Brick
39	0066 ✓	10/12/2021	Brick
40	0067 ✓	10/12/2021	Brick
41	0068 ✓	10/12/2021	Brick
42	0069 ✓	10/12/2021	Brick
43	0070 ✓	10/12/2021	Brick
44	0071 ✓	10/12/2021	Brick
45	0072 ✓	10/12/2021	Brick
46	0073 ✓	10/12/2021	Brick
47	0074 ✓	10/12/2021	Brick
48	0075 ✓	10/12/2021	Brick
49	0076 ✓	10/12/2021	Brick
50	0077 ✓	10/12/2021	Brick
51	0078 ✓	10/12/2021	Brick
52	0079 ✓	10/12/2021	Brick
53	0080 ✓	10/12/2021	Brick
54	0081 ✓	10/12/2021	Brick
55	0082 ✓	10/12/2021	Brick
56	0083 ✓	10/12/2021	Brick
57	0084 ✓	10/12/2021	Brick
58	0085 ✓	10/12/2021	Brick
59	0086 ✓	10/12/2021	Brick
60	0087 ✓	10/12/2021	Brick
61	0088 ✓	10/12/2021	Brick
62	0089 ✓	10/12/2021	Brick
63	0090 ✓	10/12/2021	Brick
64	0091 ✓	10/12/2021	Brick
65	0092 ✓	10/12/2021	Brick
66	0093 ✓	10/12/2021	Brick
67	0094 ✓	10/12/2021	Brick
68	0095 ✓	10/12/2021	Brick
69	0096 ✓	10/12/2021	Brick
70	0097 ✓	10/12/2021	Brick
71	0098 ✓	10/12/2021	Brick
72	0099 ✓	10/12/2021	Brick
73	0100 ✓	10/12/2021	Brick
74	0101 ✓	10/12/2021	Brick
75	0102 ✓	10/12/2021	Brick
76	0103 ✓	10/12/2021	Brick
77	0104 ✓	10/12/2021	Brick
78	0105 ✓	10/12/2021	Brick
79	0106 ✓	10/12/2021	Brick
80	0107 ✓	10/12/2021	Brick
81	0108 ✓	10/12/2021	Brick
82	0109 ✓	10/12/2021	Brick
83	0110 ✓	10/12/2021	Brick
84	0111 ✓	10/12/2021	Brick
85	0112 ✓	10/12/2021	Brick
86	0113 ✓	10/12/2021	Brick
87	0114 ✓	10/12/2021	Brick
88	0115 ✓	10/12/2021	Brick
89	0116 ✓	10/12/2021	Brick
90	0117 ✓	10/12/2021	Brick
91	0118 ✓	10/12/2021	Brick
92	0119 ✓	10/12/2021	Brick
93	0120 ✓	10/12/2021	Brick
94	0121 ✓	10/12/2021	Brick
95	0122 ✓	10/12/2021	Brick
96	0123 ✓	10/12/2021	Brick
97	0124 ✓	10/12/2021	Brick
98	0125 ✓	10/12/2021	Brick
99	0126 ✓	10/12/2021	Brick
100	0127 ✓	10/12/2021	Brick
101	0128 ✓	10/12/2021	Brick
102	0129 ✓	10/12/2021	Brick
103	0130 ✓	10/12/2021	Brick
104	0131 ✓	10/12/2021	Brick
105	0132 ✓	10/12/2021	Brick
106	0133 ✓	10/12/2021	Brick
107	0134 ✓	10/12/2021	Brick
108	0135 ✓	10/12/2021	Brick
109	0136 ✓	10/12/2021	Brick
110	0137 ✓	10/12/2021	Brick
111	0138 ✓	10/12/2021	Brick
112	0139 ✓	10/12/2021	Brick
113	0140 ✓	10/12/2021	Brick
114	0141 ✓	10/12/2021	Brick
115	0142 ✓	10/12/2021	Brick
116	0143 ✓	10/12/2021	Brick
117	0144 ✓	10/12/2021	Brick
118	0145 ✓	10/12/2021	Brick
119	0146 ✓	10/12/2021	Brick
120	0147 ✓	10/12/2021	Brick
121	0148 ✓	10/12/2021	Brick
122	0149 ✓	10/12/2021	Brick
123	0150 ✓	10/12/2021	Brick
124	0151 ✓	10/12/2021	Brick
125	0152 ✓	10/12/2021	Brick
126	0153 ✓	10/12/2021	Brick
127	0154 ✓	10/12/2021	Brick
128	0155 ✓	10/12/2021	Brick
129	0156 ✓	10/12/2021	Brick
130	0157 ✓	10/12/2021	Brick
131	0158 ✓	10/12/2021	Brick
132	0159 ✓	10/12/2021	Brick
133	0160 ✓	10/12/2021	Brick
134	0161 ✓	10/12/2021	Brick
135	0162 ✓	10/12/2021	Brick
136	0163 ✓	10/12/2021	Brick
137	0164 ✓	10/12/2021	Brick
138	0165 ✓	10/12/2021	Brick
139	0166 ✓	10/12/2021	Brick
140	0167 ✓	10/12/2021	Brick
141	0168 ✓	10/12/2021	Brick
142	0169 ✓	10/12/2021	Brick
143	0170 ✓	10/12/2021	Brick
144	0171 ✓	10/12/2021	Brick
145	0172 ✓	10/12/2021	Brick
146	0173 ✓	10/12/2021	Brick
147	0174 ✓	10/12/2021	Brick
148	0175 ✓	10/12/2021	Brick
149	0176 ✓	10/12/2021	Brick
150	0177 ✓	10/12/2021	Brick
151	0178 ✓	10/12/2021	Brick
152	0179 ✓	10/12/2021	Brick
153	0180 ✓	10/12/2021	Brick
154	0181 ✓	10/12/2021	Brick
155	0182 ✓	10/12/2021	Brick
156	0183 ✓	10/12/2021	Brick
157	0184 ✓	10/12/2021	Brick
158	0185 ✓	10/12/2021	Brick
159	0186 ✓	10/12/2021	Brick
160	0187 ✓	10/12/2021	Brick
161	0188 ✓	10/12/2021	Brick
162	0189 ✓	10/12/2021	Brick
163	0190 ✓	10/12/2021	Brick
164	0191 ✓	10/12/2021	Brick
165	0192 ✓	10/12/2021	Brick
166	0193 ✓	10/12/2021	Brick
167	0194 ✓	10/12/2021	Brick
168	0195 ✓	10/12/2021	Brick
169	0196 ✓	10/12/2021	Brick
170	0197 ✓	10/12/2021	Brick
171	0198 ✓	10/12/2021	Brick
172	0199 ✓	10/12/2021	Brick
173	0200 ✓	10/12/2021	Brick
174	0201 ✓	10/12/2021	Brick
175	0202 ✓	10/12/2021	Brick
176	0203 ✓	10/12/2021	Brick
177	0204 ✓	10/12/2021	Brick
178	0205 ✓	10/12/2021	Brick
179	0206 ✓	10/12/2021	Brick
180	0207 ✓	10/12/2021	Brick
181	0208 ✓	10/12/2021	Brick
182	0209 ✓	10/12/2021	Brick
183	0210 ✓	10/12/2021	Brick
184	0211 ✓	10/12/2021	Brick
185	0212 ✓	10/12/2021	Brick
186	0213 ✓	10/12/2021	Brick
187	0214 ✓	10/12/2021	Brick
188	0215 ✓	10/12/2021	Brick
189	0216 ✓	10/12/2021	Brick
190	0217 ✓	10/12/2021	Brick
191	0218 ✓	10/12/2021	Brick
192	0219 ✓	10/12/2021	Brick
193	0220 ✓	10/12/2021	Brick
194	0221 ✓	10/12/2021	Brick
195	0222 ✓	10/12/2021	Brick
196	0223 ✓	10/12/2021	Brick
197	0224 ✓	10/12/2021	Brick
198	0225 ✓	10/12/2021	Brick
199	0226 ✓	10/12/2021	Brick
200	0227 ✓	10/12/2021	Brick



OPTIMUM

Analytical and Consulting, LLC

85 Stiles Road, Suite 201, Salem, NH 03079 Phone: (603)-458-5247

CLIENT: ProScience
 ADDRESS: 22 Cummings Park
 CITY / STATE / ZIP: Woburn MA 01801
 CONTACT: ProScience
 DESCRIPTION: PLM Analysis
 LOCATION: SB01616

BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
 PROJECT #: SB01616
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 COLLECTED BY: Client
 DATE RECEIVED: 10/26/2021
 ANALYSIS DATE: 10/27/2021
 REPORT DATE: 10/27/2021
 ANALYST: Jamie Noei

Full notes per 4.2 Update 2014 Each liter of milligram per liter will be analyzed and returned to the client.

Aerobiology 21 Cummings Park, Woburn, MA 01897 T: 781-939-2217 F: 781-939-1187 general@pecora.com	
Proj. Name PLM COC...	Proj. # SB01616
Lab (SMA) Lab (OAS)	Lab (SMA) Lab (OAS)
Date Collected 10/12/2021	Date Received 10/26/2021
Location 22 Cummings Park, Woburn, MA 01801	Analyst Jamie Noei
Sample ID SB01616	Sample ID SB01616

2140470

Erik Beloff
GZA GeoEnvironmental, Inc., RI
188 Valley St., Suite 300
Providence, RI 02909

November 05, 2021

Dear Erik Beloff,

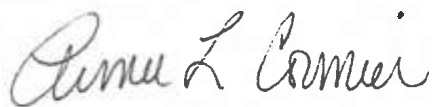
The enclosed analytical results have been obtained by using EPA 600/R-93/116 or EPA 600/M4-82-020. Calibrated Visual Estimate (CVE) is used by Aerobiology for the determination of the percentage of asbestos and other components in the sample. Point Counting is recommended when the sample contains less than 10% asbestos by CVE. Friable materials found to be less than 1% by CVE are automatically point counted (400 points) at no additional charge. Aerobiology recommends further analysis by a gravimetric method for non-friable materials that are less than 1% by CVE.

The Quality Control data related to the samples analyzed is available upon client's written request. Aerobiology Laboratory Associates, Inc., assumes no responsibility for potential sample contamination that may have occurred during the sample collection process or erroneous data provided by the client. As such, these results apply to the sample(s) as received. Unless otherwise indicated, all samples were received in acceptable condition.

The enclosed results may not be used under any circumstances as product endorsement by any US government agency including NIST/NVLAP.

All Laboratory records are retained for at least three years unless otherwise directed in writing by the client. The actual samples are retained for a period of two months and written request is necessary in order to be retained for a longer period of time. All analytical results and records are considered strictly confidential and will not be released under any circumstances to anyone except the actual client. The analytical results included in this report apply only to the items tested. This report may not be reproduced except in its entirety, without the permission of Aerobiology Laboratory Associates, Inc., Laboratory Manager.

If you have any questions please contact the Optical Manager or the Laboratory Manager.
Sincerely,



Aimee Cormier, Laboratory Manager

Enclosure: Version 2
LAB BATCH ID: B 128845 CLIENT PROJECT ID: 34957
Client Ref: Warwick Schools, Wickes
CT ID# PH-0209; MA ID# AA000156; ME ID# LB-055; NVLAP Lab Code 200090-0; RI ID # AAL-093;
VT ID# AL016876

Aerobiology Laboratory Associates, Inc.

Client Name: GZA GeoEnvironmental, Inc., RI
 PO #: N/A
 Client Project #: 34957
 Client Reference: Warwick Schools, Wickes
 Method: EPA/600/R-93/116

Batch: B128845
 Date Sampled: 11/1/2021
 Date Received: 11/3/2021
 Date Analyzed: 11/4/2021
 Date of Report: 11/5/2021

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
054A	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Ceramic Block Wall, Tan														
Location: Room 5														
Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
054B	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Ceramic Block Wall, Tan														
Location: Room 8														
Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
055A	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Grout, Gray assoc. w/054A														
Location: Room 5														
Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
055B	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Grout, Gray assoc. w/054B														
Location: Room 8														
Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
056A	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Ceramic Tile, Light Gray/Green														
Location: Girls Lavatory, Floor														
Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
056B	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Ceramic Tile, Light Gray/Green														
Location: Girls Lavatory, Floor														
Comments: Is asbestos present? No. Analyzed: Yes														

Aerobiology Laboratory Associates, Inc.

Client Name: GZA GeoEnvironmental, Inc., RI
 PO #: N/A
 Client Project #: 34957
 Client Reference: Warwick Schools, Wickes
 Method: EPA/600/R-93/116

Batch: B128845
 Date Sampled: 11/1/2021
 Date Received: 11/3/2021
 Date Analyzed: 11/4/2021
 Date of Report: 11/5/2021

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
057A	Dk. Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Tile Grout, Dark Gray														
Location: Girls Lavatory, Floor														
Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
057B	Dk. Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Tile Grout, Dark Gray														
Location: Girls Lavatory, Floor														
Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
058A	Multi	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Ceramic Tile, Red														
Location: Boys Lavatory, Floor														
Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
058B	Multi	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Ceramic Tile, Red														
Location: Boys Lavatory, Floor														
Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
059A	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Tile Grout, Dark Gray														
Location: Boys Lavatory, Floor														
Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
059B	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Tile Grout, Dark Gray														
Location: Boys Lavatory, Floor														
Comments: Is asbestos present? No. Analyzed: Yes														

Aerobiology Laboratory Associates, Inc.

Client Name: GZA GeoEnvironmental, Inc., RI
 PO #: N/A
 Client Project #: 34957
 Client Reference: Warwick Schools, Wickes
 Method: EPA/600/R-93/116

Batch: B128845
 Date Sampled: 11/1/2021
 Date Received: 11/3/2021
 Date Analyzed: 11/4/2021
 Date of Report: 11/5/2021

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
060A	White	2	0	0	0	0	0	0	0	0	0	0	0	98
Description: Plaster, White Location: Hallway Ceiling, SW Comments: Is asbestos present? Yes. Analyzed: Yes														


Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
060B		0	0	0	0	0	0	0	0	0	0	0	0	0
Description: Plaster, White Location: Hallway Ceiling, Outside Room 17 Comments: Analyzed: No														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
060C		0	0	0	0	0	0	0	0	0	0	0	0	0
Description: Plaster, White Location: Hallway Ceiling, Outside Room 8 Comments: Analyzed: No														

Asbestos Codes: CHR = Chrysotile AMO = Amosite CRO = Crocidolite ACT = Actinolite TRE = Tremolite ANT = Anthophyllite
 Non-Asbestos Codes: FBG = Fiber MNW = Mineral Wool CEL = Cellulose HAR = Hair SYN = Synthetic OTH = Other NON = Non-Fibrous Minerals

Note: To create a unique lab sample ID, use the Batch # and the Sample ID (example: [Batch #] - [Sample ID]).

* All results are in percentage.

Analyst: Dan Pine 

TAT

(circle one)

2 Days

3 Days

5 Days

Other

TAT in bus. days lab approval required for rush analysis

PAST Batch #

3228 8/15

Client: GZA

PLM

Stop on first positive*: Yes No

If no selection is made, we will analyze all samples

Address: 188 valley st. Suite 300

Chain of Custody

Special Instructions:

Providence RI 02909

Relinquished By: SS 2

Date/Time: 11-1-21 11:00

Project #: 34957 PO:

Received By Lab: Paule Lovitt-Cole

Date/Time: 11-3-21 11:35

Project Site: Warwick Schools - Wickes

Shaded area for lab use only.

Due Date:

Contact: Erik Beloff

of Samples Received: 15

Analyzed: 2 Station 4

Tel. / Fax #: 401-421-4140

Results: email fax verbal

By:

Date:

Email: erik.beloff@gza.com

Analyst Date: Paule Lovitt-Cole 11/4/21

QC by / Date: BS 11/05/21

Sample ID	Date Sampled	Description / Location	Stereo Scope		Optical Properties							RI		Asbestos Percentage (%)						Non-Asbestos Percentage (%)							
			SSAPE	Color	Heterogeneity	Texture	Frable	Morphology	Extinction	Sign of Extinction	Birefringence	Pleochroism		⊥	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
054A	11-1-21	Rm 5, Ceramic block wall, Tan	0	6	Y	Y	6	NN																			100
054B		Rm 8, Ceramic block wall, Tan	0	6	Y	Y	6	NN																			100
055A		Grout, Tan , Assoc. w/ 054A gray	0	6	Y	Y	6	NN																			10
055B		Grout, Tan , Assoc. w/ 054B gray	0	6	Y	Y	6	NN																			10
056A		Girls, Lav, floor, ceramic tile, gray Lt gray/green	0	6	Y	Y	HN																				100
056B			0	6	Y	Y	HN																				100

Comments: Birefringence L= less than .010, M= .01-.050, H= greater than .05; Microscope circle 1: BH-2 - 229027, 235000, 231856, Zeiss 3352010013

Lab uses the EPA or ELAP point count method as appropriate. SSAPE Stereo Scope Asb. % Est.

QC by: _____ Date QC: _____ Analyzed by: DR Date Analyzed: 11/4/21

Sample ID	Date Sampled	Description / Location	SSAPE	Co or	Homogeneity	Texture	Firable	Morphology	Extinction	Significant	Birefringence	Pleochroism		⊥	Chrysoe	Circle Type				Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
																Amosite	Crocidolite	Tremolite	Anthophyllite							
057A	11-1-21	Girls, Lev, floor, tile grout, dark grey	0	6	Y	6	N																		100	
057B		↓	0	6	Y	6	N																		100	
058A		Boys Lev, floor, ceramic tile, Red	0	6	Y	6	N																		100	
058B		↓	0	6	Y	6	N																		100	
059A		Boys Lev, floor, tile grout, dark grey	0	6	Y	6	N																		100	
059B		↓	0	6	Y	6	N																		100	
060A		Hallway, ceiling, plaster, white, SW	0	6	Y	6	N																		100	
060B		Hallway, ceiling, plaster, white, outside RM 17	0	6	Y	6	N																		100	
060C		Hallway, ceiling, plaster, white, outside RM 8	0	6	Y	6	N																		100	

Aerobiology Laboratory Associates, Inc.
22 Cummings Park, Woburn, MA 01801

Telephone: 781-935-3212
Facsimile: 781-932-4857
Email: boston@aerobiology.net

October 27, 2021

Attention: Erik Beloff
GZA GeoEnvironmental, Inc., RI
188 Valley St., Suite 300
Providence, RI 02909

RE: Project site Warwick Schools - Wickes Bldg.

Dear Erik Beloff,

Enclosed please find results for the sample(s) submitted to Aerobiology Laboratory Associates, Inc. on
October 20, 2021 for PLM Bulk.

The analysis was subcontracted to Optimum Analytical, 85 Stiles Road, Suite 201, Salem, NH 03079.

If you have any questions please do not hesitate to call me.

Sincerely,
Aerobiology Laboratory Associates, Inc.



Aimee Cormier
Laboratory Manager



ProScience
ProScience
22 Cummings Park
Woburn MA 01801

Project Reference: SB01616
Laboratory Batch #: 2140470
Date Samples Received: 10/26/2021
Date Samples Analyzed: 10/27/2021
Date of Final Report: 10/27/2021

SAMPLE IDENTIFICATION:

One Hundred Nine (109) samples from SB01616 project were submitted by Client on 10/26/2021

This bulk sample(s) was delivered to Optimum Analytical Consulting, LLC (Optimum) located in Salem, New Hampshire for asbestos content determination.

ANALYTICAL METHOD:

Analytical procedures were performed in accordance with the U.S. Environmental Protection Agency (EPA) Recommended Method for the Determination of Asbestos in Bulk Samples by Polarized Light Microscopy and Dispersion Staining (PLM/DS)(EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials). This report relates only to those samples analyzed, and may not be indicative of other similar appearing materials existing at this, or other sites. Quantification of asbestos content was determined by Calibrated Visual Estimation. Optimum is not responsible for sample collection activities or analytical method limitations. The laboratory is not responsible for the accuracy of results when requested to physically separate and analyze layered samples.

In any given material, fibers with a small diameter (<0.25µm) may not be detected by the PLM method. Floor tile and other resinous bound materials may yield a false negative if the asbestos fibers are too small to be resolved using PLM. Additionally, there is currently no approved EPA analytical method to reliably confirm vermiculite as non-asbestos containing. Additional analytical methods may be required. Optimum Analytical recommends using Transmission Electron Microscopy (TEM) or other approved methods for a more definitive analysis.

Optimum will retain all samples for a minimum of three months. Further analysis or return of samples must be requested within this three month period to guarantee their availability. This report may not be reproduced except in full, without the written approval of Optimum Analytical and Consulting, LLC.

Use of the NVLAP and AIHA Logo in no way constitutes or implies product certification, approval, or endorsement by the National Institute of Standards and Technology or the American Industrial Hygiene Association.

Detection Limit <1%, Reporting Limits: CVES = 1%, 400 Point Count = .25%, 1000 Point Count = 0.1%; Present or Absent are observations made during a qualitative analysis.

This report is considered preliminary until signed by both the Laboratory Analyst and Laboratory Director or Supervisor. If you have any questions regarding this report, please do not hesitate to contact us.

Jamie L. Noel
Laboratory Director

Kristina Scaviola
Laboratory Supervisor



OPTIMUM

Analytical and Consulting, LLC

85 Stiles Road, Suite 201, Salem, NH 03079 Phone: (603)-458-5247

CLIENT: ProScience
ADDRESS: 22 Cummings Park
CITY / STATE / ZIP: Woburn MA 01801
CONTACT: ProScience
DESCRIPTION: PLM Analysis
LOCATION: SB01616

BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
PROJECT #: SB01616
DATE COLLECTED: 10/12/2021
COLLECTED BY: Client
DATE RECEIVED: 10/26/2021
ANALYSIS DATE: 10/27/2021
REPORT DATE: 10/27/2021
ANALYST: Jamie Noel

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-001 001A	Main Entrance Hallway Ceiling 1'x1' Ceiling Tile, Brown/White	LAYER 1 100%	None Detected	Cellulose Fiber 95% Binder/Filler 5%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-002 001B	NE-SW Hallway Ceiling 1'x1' Ceiling Tile, Brown/White	LAYER 1 100%	None Detected	Cellulose Fiber 95% Binder/Filler 5%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-003 002A	Main Entrance Hallway Ceiling Glue Daubs, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-004 002B	NE-SW Hallway Ceiling Glue Daubs, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-005 003A	Main Entrance Hallway 2'x4' Ceiling Tile, Gray/White	LAYER 1 100%	None Detected	Cellulose Fiber 65% Fibrous Glass 15% Binder/Filler 20%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-006 003B	NW-SE Hallway 2'x4' Ceiling Tile, Gray/White	LAYER 1 100%	None Detected	Cellulose Fiber 65% Fibrous Glass 15% Binder/Filler 20%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-007 004A	Main Entrance Hallway 12"x12" Tile, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-008 004B	Hallway NE-SW Floor 12"x12" Tile, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%



OPTIMUM

Analytical and Consulting, LLC

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CLIENT: ProScience
ADDRESS: 22 Cummings Park
CITY / STATE / ZIP: Woburn MA 01801
CONTACT: ProScience
DESCRIPTION: PLM Analysis
LOCATION: SB01616

BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-800/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
PROJECT #: SB01616
DATE COLLECTED: 10/12/2021
COLLECTED BY: Client
DATE RECEIVED: 10/26/2021
ANALYSIS DATE: 10/27/2021
REPORT DATE: 10/27/2021
ANALYST: Jamie Noel

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-009 005A	Main Entrance Hallway Mastic, Tan	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-010 005B	Hallway NE-SW Floor Mastic, Tan	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-011 006A	Main Entrance Hallway Wall 3" Cove Base, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-012 006B	Main Entrance NE-SW Hallway Wall 3" Cove Base, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-013 007A	Main Entrance Hallway Wall 3" Cove Base Mastic, Tan	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-014 007B	NE-SW Hallway Wall 3" Cove Base Mastic, Tan	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-015 008A	N/A All Purpose 3" Cove Base, Dark Brown	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-016 008B	N/A All Purpose 3" Cove Base, Dark Brown	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%



OPTIMUM

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CONTACT: ProScience
DESCRIPTION: PLM Analysis
LOCATION: SB01616

BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
PROJECT #: SB01616
DATE COLLECTED: 10/12/2021
COLLECTED BY: Client
DATE RECEIVED: 10/26/2021
ANALYSIS DATE: 10/27/2021
REPORT DATE: 10/27/2021
ANALYST: Jamie Noel

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
2140470-017 009A	N/A All Purpose 3" Cove Base Mastic, Tan	LAYER 1 100%	None Detected		Cellulose Fiber Binder/Filler	1% 99%
Total % Asbestos:			No Asbestos Detected		Total % Non-Asbestos: 100.0%	
2140470-018 009B	N/A All Purpose 3" Cove Base Mastic, Tan	LAYER 1 100%	None Detected		Cellulose Fiber Binder/Filler	1% 99%
Total % Asbestos:			No Asbestos Detected		Total % Non-Asbestos: 100.0%	
2140470-019 010A	APM, Closet Floor 9" x 9" Tile, Blue	LAYER 1 100%	Chrysotile	5%	Cellulose Fiber Binder/Filler	1% 94%
Total % Asbestos:				5.0%	Total % Non-Asbestos: 95.0%	
2140470-020 010B	APM, Closet Floor 9" x 9" Tile, Blue Note: Positive Stop	LAYER 1 100%				
2140470-021 011A	APM, Closet Floor Mastic, Black	LAYER 1 100%	Chrysotile	3%	Cellulose Fiber Binder/Filler	1% 96%
Total % Asbestos:				3.0%	Total % Non-Asbestos: 97.0%	
2140470-022 011B	APM, Closet Floor Mastic, Black Note: Positive Stop	LAYER 1 100%				
2140470-023 012A	N/A 9x9 Kitchen Counter Tile, Green	LAYER 1 100%	Chrysotile	3%	Cellulose Fiber Binder/Filler	1% 96%
Total % Asbestos:				3.0%	Total % Non-Asbestos: 97.0%	
2140470-024 012B	N/A 9x9 Kitchen Counter Tile, Green Note: Positive Stop	LAYER 1 100%				



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CONTACT: ProScience
DESCRIPTION: PLM Analysis
LOCATION: SB01616

BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
PROJECT #: SB01616
DATE COLLECTED: 10/12/2021
COLLECTED BY: Client
DATE RECEIVED: 10/26/2021
ANALYSIS DATE: 10/27/2021
REPORT DATE: 10/27/2021
ANALYST: Jamie Noel

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type	(%)	Non-Asbestos Components	(%)
2140470-025 013A	N/A Mastic, Black	LAYER 1 100%	Chrysotile	2%	Cellulose Fiber Binder/Filler	1% 97%
Total % Asbestos:				2.0%	Total % Non-Asbestos: 98.0%	
2140470-026 013B	N/A Mastic, Black Note: Positive Stop	LAYER 1 100%				
2140470-027 014A	Kitchen Sink, Anti-Condensate, Black	LAYER 1 100%	Chrysotile	5%	Cellulose Fiber Binder/Filler	2% 93%
Total % Asbestos:				5.0%	Total % Non-Asbestos: 95.0%	
2140470-028 014B	Kitchen Sink, Anti-Condensate, Black Note: Positive Stop	LAYER 1 100%				
2140470-029 015A	Courtyard Windows Exterior Window Glazing, White/Black	LAYER 1 100%	Chrysotile	2%	Cellulose Fiber Binder/Filler	1% 97%
Total % Asbestos:				2.0%	Total % Non-Asbestos: 98.0%	
2140470-030 015B	Courtyard Windows Exterior Window Glazing, White/Black Note: Positive Stop	LAYER 1 100%				
2140470-031 016A	NW-SE Hallway Ceiling Plaster, White/Beige	LAYER 1 100%	Chrysotile	3%	Cellulose Fiber Binder/Filler	1% 96%
Total % Asbestos:				3.0%	Total % Non-Asbestos: 97.0%	
2140470-032 016B	NW-SE Hallway Ceiling Plaster, White/Beige Note: Positive Stop	LAYER 1 100%				
2140470-033 017A	Room 6 Entryway Wall Wall Plaster, White	LAYER 1 100%	None Detected		Cellulose Fiber Binder/Filler	1% 99%
Total % Asbestos:			No Asbestos Detected		Total % Non-Asbestos: 100.0%	



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CONTACT: ProScience
DESCRIPTION: PLM Analysis
LOCATION: SB01616

BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
PROJECT #: SB01616
DATE COLLECTED: 10/12/2021
COLLECTED BY: Client
DATE RECEIVED: 10/26/2021
ANALYSIS DATE: 10/27/2021
REPORT DATE: 10/27/2021
ANALYST: Jamie Noel

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-034 017B	Room 6 Entryway Wall Wall Plaster, White	LAYER 1 100%	None Detected	Cellulose Fiber Binder/Filler 1% 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-035 018A	Room 6 Entryway Wall Wallboard, Gray/Brown	LAYER 1 100%	None Detected	Cellulose Fiber Binder/Filler 10% 90%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-036 018B	Room 6 Entryway Wall Wallboard, Gray/Brown	LAYER 1 100%	None Detected	Cellulose Fiber Binder/Filler 10% 90%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-037 019A	Speech Room Chalkboard Glue Daubs, Black	LAYER 1 100%	Chrysotile 8%	Cellulose Fiber Binder/Filler 1% 91%
Total % Asbestos:			8.0%	Total % Non-Asbestos: 92.0%
2140470-038 019B	Speech Room Chalkboard Glue Daubs, Black Note: Positive Stop	LAYER 1 100%		
2140470-039 020A	Room 4 (Ant.) 3" Wall Cove Base, Black	LAYER 1 100%	None Detected	Cellulose Fiber Binder/Filler 1% 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-040 020B	Room 4 (Ant.) 3" Wall Cove Base, Black	LAYER 1 100%	None Detected	Cellulose Fiber Binder/Filler 1% 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-041 021A	Room 4 (Ant.) 3" Wall Cove Base Mastic, White	LAYER 1 100%	None Detected	Cellulose Fiber Binder/Filler 1% 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%



OPTIMUM

Analytical and Consulting, LLC

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CLIENT: ProScience
ADDRESS: 22 Cummings Park
CITY / STATE / ZIP: Woburn MA 01801
CONTACT: ProScience
DESCRIPTION: PLM Analysis
LOCATION: SB01616

BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
PROJECT #: SB01616
DATE COLLECTED: 10/12/2021
COLLECTED BY: Client
DATE RECEIVED: 10/26/2021
ANALYSIS DATE: 10/27/2021
REPORT DATE: 10/27/2021
ANALYST: Jamie Noel

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-042 021B	Room 4 (Ant.) 3" Wall Cove Base Mastic, White	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
		Total % Asbestos:	No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-043 022A	SE Hall Adj. to Room 1-4 Plaster, White	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
		Total % Asbestos:	No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-044 022B	SE Hall Adj. to Room 1-4 Plaster, White	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
		Total % Asbestos:	No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-045 023A	SE Hall Adj. to Room 1-4 1/4" Wallboard, White/Brown	LAYER 1 100%	None Detected	Cellulose Fiber 10% Binder/Filler 90%
		Total % Asbestos:	No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-046 023B	SE Hall Adj. to Room 1-4 1/4" Wallboard, White/Brown	LAYER 1 100%	None Detected	Cellulose Fiber 10% Binder/Filler 90%
		Total % Asbestos:	No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-047 024A	SE Hall Adj. to Room 1-4 Acoustical Ceiling, Gray/Brown	LAYER 1 100%	None Detected	Cellulose Fiber 20% Binder/Filler 80%
		Total % Asbestos:	No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-048 024B	SE Hall Adj. to Room 1-4 Acoustical Ceiling, Gray/Brown	LAYER 1 100%	None Detected	Cellulose Fiber 20% Binder/Filler 80%
		Total % Asbestos:	No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-049 025A	SE Hall Adj. to Room 1-4 Fiberglass Pipe Insulation, Yellow/Beige/Silver	LAYER 1 100%	None Detected	Cellulose Fiber 10% Fibrous Glass 85% Binder/Filler 5%
		Total % Asbestos:	No Asbestos Detected	Total % Non-Asbestos: 100.0%



OPTIMUM

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CONTACT: ProScience
DESCRIPTION: PLM Analysis
LOCATION: SB01616

BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
PROJECT #: SB01616
DATE COLLECTED: 10/12/2021
COLLECTED BY: Client
DATE RECEIVED: 10/26/2021
ANALYSIS DATE: 10/27/2021
REPORT DATE: 10/27/2021
ANALYST: Jamie Noel

REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-050 025B	SE Hall Adj. to Room 1-4 Fiberglass Pipe Insulation, Yellow/Beige/Silver	LAYER 1 100%	None Detected	Cellulose Fiber 10% Fibrous Glass 85% Binder/Filler 5%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-051 025C	SE Hall Adj. to Room 1-4 Fiberglass Pipe Insulation, Yellow/Beige/Silver	LAYER 1 100%	None Detected	Cellulose Fiber 10% Fibrous Glass 85% Binder/Filler 5%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-052 026A	Room 20 Cork Board, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 2% Binder/Filler 98%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-053 026B	Room 20 Cork Board, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 2% Binder/Filler 98%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-054 027A	Room 20 Linoleum, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 45% Binder/Filler 55%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-055 027B	Room 20 Linoleum, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 45% Binder/Filler 55%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-056 028A	Room 20 Mastic, Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-057 028B	Room 20 Mastic, Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%



OPTIMUM

Analytical and Consulting, LLC

85 Stiles Road, Suite 201, Salem, NH 03079 Phone: (603)-458-5247

CLIENT: ProScience
 ADDRESS: 22 Cummings Park
 CITY / STATE / ZIP: Woburn MA 01801
 CONTACT: ProScience
 DESCRIPTION: PLM Analysis
 LOCATION: SB01616

BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

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REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-058 029A	Room 20 Surfacing Material on Window Shelf, Red	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-059 029B	Room 20 Surfacing Material on Window Shelf, Red	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-060 030A	Room 20 Mastic (Appears to be Felt Paper), Black Note: Mastic not present.	LAYER 1 100%	None Detected	Cellulose Fiber 85% Binder/Filler 15%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-061 030B	Room 20 Mastic (Appears to be Felt Paper), Black Note: Mastic not present.	LAYER 1 100%	None Detected	Cellulose Fiber 85% Binder/Filler 15%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-062 031A	Room 20 Interior Window Caulk, Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-063 031B	Room 20 Interior Window Caulk, Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-064 032A	Room 22, Exit to Room 21 Interior Wall Joint Caulk, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%



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BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

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REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-065 032B	Room 22, Exit to Room 21 Interior Wall Joint Caulk, Brown	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-066 033A	NW-SE Hall Small Section Adj. Room 22/23 Exit Door Joint Caulk, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 5% Binder/Filler 95%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-067 033B	NW-SE Hall Small Section Adj. Room 22/23 Exit Door Joint Caulk, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 5% Binder/Filler 95%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-068 034A	NE-SW Hall, between Restroom Sink, Adj. Room 20 Panel Mastic, Tan	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-069 034B	NE-SW Hall, between Restroom Sink, Adj. Room 20 Panel Mastic, Tan	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-070 035A	Auditorium Hall, Wall 3" Cove Base, Blue	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-071 035B	Auditorium Hall, Wall 3" Cove Base, Blue	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%



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BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

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REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-072 036A	Auditorium Hall Mastic, Tan	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-073 036B	Auditorium Hall Mastic, Tan	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-074 037A	Gymnasium 12" X 12" Floor Tile, Light Tan	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-075 037B	Auditorium Hallway 12" X 12" Floor Tile, Light Tan	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-076 038A	Gymnasium Mastic, Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-077 038B	Auditorium Hallway Mastic, Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-078 039A	Gymnasium Acoustical Ceiling, Red/Tan	LAYER 1 100%	None Detected	Cellulose Fiber 75% Binder/Filler 25%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-079 039B	Gymnasium Acoustical Ceiling, Red/Tan	LAYER 1 100%	None Detected	Cellulose Fiber 75% Binder/Filler 25%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%



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BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

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REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-080 040A	Auditorium Hallway 2'x2' Ceiling Tile, White/Gray	LAYER 1 100%	None Detected	Cellulose Fiber 65% Fibrous Glass 15% Binder/Filler 20%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-081 040B	Auditorium Hallway 2'x2' Ceiling Tile, White/Gray	LAYER 1 100%	None Detected	Cellulose Fiber 65% Fibrous Glass 15% Binder/Filler 20%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-082 041A	Auditorium Ceiling Plaster, White	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-083 041B	Auditorium Ceiling Plaster, White	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-084 042A	Auditorium Hall/Gym Exterior Vertical Joint Caulk, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-085 042B	Auditorium Hall/Gym Exterior Vertical Joint Caulk, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-086 043A	N/A Bulk Material, Gray/Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-087 043B	N/A Bulk Material, Gray/Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%



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BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

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REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-088 044A	Main Entrance, Metal Canopy Metal Mastic, White/Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-089 044B	Main Entrance, Metal Canopy Metal Mastic, White/Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-090 045A	Exterior, between Room 17 and 9 Exterior Window Glazing, White/Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-091 045B	Exterior, between Room 17 and 9 Exterior Window Glazing, White/Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-092 046A	South Roof Field Tar & Gravel Felt Layers, Black	LAYER 1 100%	None Detected	Cellulose Fiber 65% Binder/Filler 35%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-093 046B	South Roof Field Tar & Gravel Felt Layers, Black	LAYER 1 100%	None Detected	Cellulose Fiber 65% Binder/Filler 35%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-094 047A	Roof Seam Sealant, Black/Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-095 047B	Roof Seam Sealant, Black/Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%



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BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

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REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-096 048A	Roof Vent Pipe Sealant, Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-097 048B	Roof Vent Pipe Sealant, Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-098 049A	Roof, Entry Hall and Auditorium Horizontal Flashing Caulk, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-099 049B	Roof, Entry Hall and Auditorium Horizontal Flashing Caulk, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-100 050A	Roof Metal Flashing Caulk, Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-101 050B	Roof Metal Flashing Caulk, Black	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-102 051A	Roof, Main Entrance Felt Layers, Black	LAYER 1 100%	None Detected	Cellulose Fiber 45% Fibrous Glass 15% Binder/Filler 40%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-103 051B	Roof, Main Entrance Felt Layers, Black	LAYER 1 100%	None Detected	Cellulose Fiber 45% Fibrous Glass 15% Binder/Filler 40%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%



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BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

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REPORT OF ANALYSIS

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Asbestos Type (%)	Non-Asbestos Components (%)
2140470-104 052A	Roof NW Rubber 2 Layers and ISO (Sample is felt paper), Black	LAYER 1 100%	None Detected	Cellulose Fiber 65% Binder/Filler 35%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-105 052B	Roof Tar and Gravel Felt Layers, Black	LAYER 1 100%	None Detected	Cellulose Fiber 65% Binder/Filler 35%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-106 053A	Roof NW Roof Insulation, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-107 053B	Roof Roof Insulation, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-108 054A	NE End Roof, Seam Sealant, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%
2140470-109 054B	NE End Roof, Seam Sealant, Gray	LAYER 1 100%	None Detected	Cellulose Fiber 1% Binder/Filler 99%
Total % Asbestos:			No Asbestos Detected	Total % Non-Asbestos: 100.0%

**Analyst
Signatory:**
Jamie Noel



Customer Name: G-24
 Project Name/ #: 34957-00

SB01616
PAS1 Batch #
B128685

QC by: _____ Date QC: _____ Analyzed by: _____ Date Analyzed: _____

Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism		⊥	Chrysotile	Circle Type					Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous	
																Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite								
028B	10/2/21	↓ Room 20, Survey Material on window sills, Red																										
029A		↓ Room 20, Survey Material on window sills, Red																										
029B		↓ Assc. 029: Mixture, Black																										
030A		↓ Interior window caulk, Black, (Room 20)																										
030B		↓ Room 22, Exit to Room 21, Interior wall joint caulk between Portland Doorframe																										
031B		↓ NW-SE Hall, Small section Adj. Room 22/23, Exit Door Joint Caulk, Joint and Door frame																										
032A																												
032B																												
033A																												

Comments: Birefringence L= less than .010, M= .01-.050, H= greater than .05; Microscope circle 1: BH-2 - 239027, 235000, 231856, 2085 - 3352010013
 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Ass. % Est.
 ver 4.7 Updated 05/06/19 Each layer of multilayered materials are analyzed and charged individually (per NESHA/EPA). Page 7-Of 12

3801616

OC by: _____ Date OC: _____ Analyzed by: _____ Date Analyzed: _____

Sample ID	Date Sampled	Description / Location	SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism		⊥	Chrysotile	Circle Type					Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
																Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite							
03313	10/12/21																										
0344A		NE-SW Hall, between Post-room Sink, Panel Masker, Adj. room 20, Tan																									
03413																											
0354A		Auditorium Hall, Wall, 3" Core Base Blue																									
03513																											
0364A		Assoc. 035: Masker, fan																									
03613																											
0374A		Gymnasium, floor tile, 12" x 12", light tan, speckled																									
03713		Auditorium hallway, floor tile, 12" x 12", light tan, speckled																									
0384A		Assoc. 037A: Masker, Black																									

Comments: Birefringence less than 0.10, Ma: 01:050, He: greater than 0.5, Microscope circle: 1, BH-2 - 229027, 235006, 231856, Zeiss - 395010013
 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Abb % Est.
 ver 4.7 Updated 05/06/19 Each layer of multilayered materials are analyzed and charged individually (per NESHAP/EPA). Page 8 of 12



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Acrobiology 22 Cummings Park, Woburn, MA 01801 T: 781-935-9312 F: 781-935-4537 general@acrobio.com
PLM COC 1.1

Client: Acrobiology Laboratory/ Associates, Inc.
 Address: 22 Cummings Park, Woburn MA 01801
 P.O. # SB01616

Contact: Donovan Townsend
 Phone: 781-935-9312
 Email: donovan@acrobio.com

Received By: [Signature] Date/Time: 10/27/21 8:4

Analysis: PLM COC 1.1
 Lead Code: 101433-0
 Method: EPA 800
 Lead Code: EPA 800
 Lead Code: EPA 800
 Special Instructions: None on File
 TML: 10/27/2021
 Lead Code: 101433-0

Line #	Sample ID	Date Collected	Description	Location
1	001A	10/12/2021	1st Ceiling Tile above Drop Ceiling, White	Main Entrance Lobby Ceiling
2	001B	10/12/2021	1st Ceiling Tile above Drop Ceiling, White	NE 5th Lobby Ceiling
3	002A	10/12/2021	2nd Ceiling Tile above Drop Ceiling, White	Main Entrance Lobby Ceiling
4	002B	10/12/2021	2nd Ceiling Tile, White	Main Entrance Lobby
5	003A	10/12/2021	2nd Ceiling Tile, White	Main Entrance Lobby
6	003B	10/12/2021	2nd Ceiling Tile, White	Main Entrance Lobby
7	004A	10/12/2021	1st Ceiling Tile, White	Main Entrance Lobby
8	004B	10/12/2021	1st Ceiling Tile, White	Main Entrance Lobby
9	005A	10/12/2021	1st Ceiling Tile, White	Main Entrance Lobby
10	005B	10/12/2021	1st Ceiling Tile, White	Main Entrance Lobby
11	006A	10/12/2021	1st Ceiling Tile, White	Main Entrance Lobby
12	006B	10/12/2021	1st Ceiling Tile, White	Main Entrance Lobby
13	007A	10/12/2021	1st Ceiling Tile, White	Main Entrance Lobby
14	007B	10/12/2021	1st Ceiling Tile, White	Main Entrance Lobby
15	008A	10/12/2021	1st Ceiling Tile, White	Main Entrance Lobby
16	008B	10/12/2021	1st Ceiling Tile, White	Main Entrance Lobby

PLM COC 1.1
 Lead Code: 101433-0
 Method: EPA 800
 Lead Code: EPA 800
 Lead Code: EPA 800
 Special Instructions: None on File
 TML: 10/27/2021
 Lead Code: 101433-0



OPTIMUM

Analytical and Consulting, LLC

85 Stiles Road, Suite 201, Salem, NH 03079 Phone: (603)-458-5247

CLIENT: ProScience
 ADDRESS: 22 Cummings Park
 CITY / STATE / ZIP: Woburn MA 01801
 CONTACT: ProScience
 DESCRIPTION: PLM Analysis
 LOCATION: SB01616

BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
 PROJECT #: SB01616
 DATE COLLECTED: 10/12/2021
 COLLECTED BY: Client
 DATE RECEIVED: 10/26/2021
 ANALYSIS DATE: 10/27/2021
 REPORT DATE: 10/27/2021
 ANALYST: Jamie Noel

PLM #	PLM #	PLM #	PLM #
16	0280 ✓	10/12/2021	All Porous 2" Duct Green Coat Blue
17	0280 ✓	10/12/2021	All Porous Room 1" Wall Coat Blue Matte, Top area, 4028A
18	0280 ✓	10/12/2021	All Porous Room 2" Wall Coat Blue Matte, Top Area, 4028B
19	018A ✓	10/12/2021	9" x 7" Tile, Blue
20	0280 ✓	10/12/2021	9" x 7" Tile, Blue
21	011A ✓	10/12/2021	Asst. 504 Brick Matte
22	011B ✓	10/12/2021	Asst. 108 Brick Matte
23	012A ✓	10/12/2021	Kitchen Counter Tile, 9" x 9" Cream
24	012B ✓	10/12/2021	Kitchen Counter Tile, 9" x 9" Cream
25	013A ✓	10/12/2021	Asst. 128 Brick Matte
26	013B ✓	10/12/2021	Asst. 128 Brick Matte
27	014A ✓	10/12/2021	5" x 5" White Ceramic Tile
28	014B ✓	10/12/2021	5" x 5" White Ceramic Tile
29	014A ✓	10/12/2021	5" x 5" White Ceramic Tile
30	015B ✓	10/12/2021	Exterior Window Cladding, Oak Brown/Vinyl
31	016A ✓	10/12/2021	Exterior Window Cladding, Oak Brown/Vinyl
32	016B ✓	10/12/2021	Exterior Window Cladding, Oak Brown/Vinyl
33	017A ✓	10/12/2021	Ceiling Panel, White
34	017B ✓	10/12/2021	Ceiling Panel, White
35	018A ✓	10/12/2021	Walls, White
36	018B ✓	10/12/2021	Walls, White
37	019A ✓	10/12/2021	Chalkboard, Oak Green, Matt
38	019B ✓	10/12/2021	Chalkboard, Oak Green, Matt

PLM #s are not a United States PLM #. Each type of multiplexed sample will be analyzed and charged individually per NESHAP/MSHA. 10/26/2021

Acrobiology 22 Cummings Park Woburn, MA 01801 T: 781-458-5247 F: 781-592-4467 info@acrobiology.com
 PLM COC # 5801616
 PASI Batch # 5801616



OPTIMUM

Analytical and Consulting LLC

85 Stiles Road, Suite 201, Salem, NH 03079 Phone: (603)-458-5247

CLIENT: ProScience
 ADDRESS: 22 Cummings Park
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 CONTACT: ProScience
 DESCRIPTION: PLM Analysis
 LOCATION: SB01616

BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
 PROJECT #: SB01616
 DATE COLLECTED: 10/12/2021
 COLLECTED BY: Client
 DATE RECEIVED: 10/26/2021
 ANALYSIS DATE: 10/27/2021
 REPORT DATE: 10/27/2021
 ANALYST: Jamie Noel

PLM Method	Project #	PLM COC #	PAST Batch #
39	SB01616	PLM COC #	PAST Batch #
40	SB01616	PLM COC #	PAST Batch #
41	SB01616	PLM COC #	PAST Batch #
42	SB01616	PLM COC #	PAST Batch #
43	SB01616	PLM COC #	PAST Batch #
44	SB01616	PLM COC #	PAST Batch #
45	SB01616	PLM COC #	PAST Batch #
46	SB01616	PLM COC #	PAST Batch #
47	SB01616	PLM COC #	PAST Batch #
48	SB01616	PLM COC #	PAST Batch #
49	SB01616	PLM COC #	PAST Batch #
50	SB01616	PLM COC #	PAST Batch #
51	SB01616	PLM COC #	PAST Batch #
52	SB01616	PLM COC #	PAST Batch #
53	SB01616	PLM COC #	PAST Batch #
54	SB01616	PLM COC #	PAST Batch #
55	SB01616	PLM COC #	PAST Batch #
56	SB01616	PLM COC #	PAST Batch #
57	SB01616	PLM COC #	PAST Batch #
58	SB01616	PLM COC #	PAST Batch #
59	SB01616	PLM COC #	PAST Batch #
60	SB01616	PLM COC #	PAST Batch #
61	SB01616	PLM COC #	PAST Batch #

PLM Method: ver 4.2 Version 2016 Each layer of multiplexed samples will be analyzed and changed individually for BESTMATCH.PVA. *OK 10/11/21* Page 3 of 5



OPTIMUM

Analytical and Consulting, LLC

85 Stiles Road, Suite 201, Salem, NH 03079 Phone: (603)-458-5247

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DESCRIPTION: PLM Analysis
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BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
PROJECT #: SB01616
DATE COLLECTED: 10/12/2021
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ANALYSIS DATE: 10/27/2021
REPORT DATE: 10/27/2021
ANALYST: Jamie Noel

Req. Name	Req. #	PLM CDC	PAST BATCH #
62 001A ✓	10122001	Interior Window Cank, Room	Room 20
63 001B ✓	10122001	Interior Window Cank, Room	Room 20
64 002A ✓	10122001	Interior Wall Joint Cank, between wall & Door Frame, Room	Room 22, Room 20 & Room 21
65 002B ✓	10122001	Interior Wall Joint Cank, between Wall & Door Frame, Room	Room 22, East to Room 21
66 003A ✓	10122001	Joint Cank, Gray	Room 22, East to Room 21
67 003B ✓	10122001	Joint Cank, Gray	Room 22, East to Room 21
68 003A ✓	10122001	Joint Cank, Gray	Room 22, East to Room 21
69 003B ✓	10122001	Joint Cank, Gray	Room 22, East to Room 21
70 004A ✓	10122001	Primal Matrix, Tan	Room 22, East to Room 21
71 004B ✓	10122001	Primal Matrix, Tan	Room 22, East to Room 21
72 005A ✓	10122001	Primal Matrix, Tan	Room 22, East to Room 21
73 005B ✓	10122001	Primal Matrix, Tan	Room 22, East to Room 21
74 006A ✓	10122001	Primal Matrix, Tan	Room 22, East to Room 21
75 006B ✓	10122001	Primal Matrix, Tan	Room 22, East to Room 21
76 007A ✓	10122001	Primal Matrix, Tan	Room 22, East to Room 21
77 007B ✓	10122001	Primal Matrix, Tan	Room 22, East to Room 21
78 008A ✓	10122001	Primal Matrix, Tan	Room 22, East to Room 21
79 008B ✓	10122001	Primal Matrix, Tan	Room 22, East to Room 21
80 009A ✓	10122001	Primal Matrix, Tan	Room 22, East to Room 21
81 009B ✓	10122001	Primal Matrix, Tan	Room 22, East to Room 21
82 010A ✓	10122001	Primal Matrix, Tan	Room 22, East to Room 21
83 010B ✓	10122001	Primal Matrix, Tan	Room 22, East to Room 21
84 011A ✓	10122001	Primal Matrix, Tan	Room 22, East to Room 21
85 011B ✓	10122001	Primal Matrix, Tan	Room 22, East to Room 21

Full batch per 2 Update 2021. Each type of multibag sample will be analyzed and changed individually per 10/26/2021. 10/27/2021 Page 4 of 8



OPTIMUM

Analytical and Consulting, LLC

85 Stiles Road, Suite 201, Salem, NH 03079 Phone: (603)-458-5247

CLIENT: ProScience
ADDRESS: 22 Cummings Park
CITY / STATE / ZIP: Woburn MA 01801
CONTACT: ProScience
DESCRIPTION: PLM Analysis
LOCATION: SB01616

BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
PROJECT #: SB01616
DATE COLLECTED: 10/12/2021
COLLECTED BY: Client
DATE RECEIVED: 10/26/2021
ANALYSIS DATE: 10/27/2021
REPORT DATE: 10/27/2021
ANALYST: Jamie Noel

Proj. Name	Proj. #	PLM LOC. #	PLM Batch #
Aerobiology	22 Cummings Park, Woburn, MA 01801 T: 781-931-3113 F: 781-931-489 jnoel@optimum.com	PLM C0C-1	2140470
			PASI Batch #
			SB01616
00	0028 ✓	10/12/2021	Vertical Joint Crack in between Bricks
01	0029 ✓	10/12/2021	Brick
02	0030 ✓	10/12/2021	Brick
03	0031 ✓	10/12/2021	Brick
04	0032 ✓	10/12/2021	Brick
05	0033 ✓	10/12/2021	Brick
06	0034 ✓	10/12/2021	Brick
07	0035 ✓	10/12/2021	Brick
08	0036 ✓	10/12/2021	Brick
09	0037 ✓	10/12/2021	Brick
10	0038 ✓	10/12/2021	Brick
11	0039 ✓	10/12/2021	Brick
12	0040 ✓	10/12/2021	Brick
13	0041 ✓	10/12/2021	Brick
14	0042 ✓	10/12/2021	Brick
15	0043 ✓	10/12/2021	Brick
16	0044 ✓	10/12/2021	Brick
17	0045 ✓	10/12/2021	Brick
18	0046 ✓	10/12/2021	Brick
19	0047 ✓	10/12/2021	Brick
20	0048 ✓	10/12/2021	Brick
21	0049 ✓	10/12/2021	Brick
22	0050 ✓	10/12/2021	Brick
23	0051 ✓	10/12/2021	Brick
24	0052 ✓	10/12/2021	Brick
25	0053 ✓	10/12/2021	Brick
26	0054 ✓	10/12/2021	Brick
27	0055 ✓	10/12/2021	Brick
28	0056 ✓	10/12/2021	Brick
29	0057 ✓	10/12/2021	Brick
30	0058 ✓	10/12/2021	Brick
31	0059 ✓	10/12/2021	Brick
32	0060 ✓	10/12/2021	Brick
33	0061 ✓	10/12/2021	Brick
34	0062 ✓	10/12/2021	Brick
35	0063 ✓	10/12/2021	Brick
36	0064 ✓	10/12/2021	Brick
37	0065 ✓	10/12/2021	Brick
38	0066 ✓	10/12/2021	Brick
39	0067 ✓	10/12/2021	Brick
40	0068 ✓	10/12/2021	Brick
41	0069 ✓	10/12/2021	Brick
42	0070 ✓	10/12/2021	Brick
43	0071 ✓	10/12/2021	Brick
44	0072 ✓	10/12/2021	Brick
45	0073 ✓	10/12/2021	Brick
46	0074 ✓	10/12/2021	Brick
47	0075 ✓	10/12/2021	Brick
48	0076 ✓	10/12/2021	Brick
49	0077 ✓	10/12/2021	Brick
50	0078 ✓	10/12/2021	Brick
51	0079 ✓	10/12/2021	Brick
52	0080 ✓	10/12/2021	Brick
53	0081 ✓	10/12/2021	Brick
54	0082 ✓	10/12/2021	Brick
55	0083 ✓	10/12/2021	Brick
56	0084 ✓	10/12/2021	Brick
57	0085 ✓	10/12/2021	Brick
58	0086 ✓	10/12/2021	Brick
59	0087 ✓	10/12/2021	Brick
60	0088 ✓	10/12/2021	Brick
61	0089 ✓	10/12/2021	Brick
62	0090 ✓	10/12/2021	Brick
63	0091 ✓	10/12/2021	Brick
64	0092 ✓	10/12/2021	Brick
65	0093 ✓	10/12/2021	Brick
66	0094 ✓	10/12/2021	Brick
67	0095 ✓	10/12/2021	Brick
68	0096 ✓	10/12/2021	Brick
69	0097 ✓	10/12/2021	Brick
70	0098 ✓	10/12/2021	Brick
71	0099 ✓	10/12/2021	Brick
72	0100 ✓	10/12/2021	Brick
73	0101 ✓	10/12/2021	Brick
74	0102 ✓	10/12/2021	Brick
75	0103 ✓	10/12/2021	Brick
76	0104 ✓	10/12/2021	Brick
77	0105 ✓	10/12/2021	Brick
78	0106 ✓	10/12/2021	Brick
79	0107 ✓	10/12/2021	Brick
80	0108 ✓	10/12/2021	Brick
81	0109 ✓	10/12/2021	Brick
82	0110 ✓	10/12/2021	Brick
83	0111 ✓	10/12/2021	Brick
84	0112 ✓	10/12/2021	Brick
85	0113 ✓	10/12/2021	Brick
86	0114 ✓	10/12/2021	Brick
87	0115 ✓	10/12/2021	Brick
88	0116 ✓	10/12/2021	Brick
89	0117 ✓	10/12/2021	Brick
90	0118 ✓	10/12/2021	Brick
91	0119 ✓	10/12/2021	Brick
92	0120 ✓	10/12/2021	Brick
93	0121 ✓	10/12/2021	Brick
94	0122 ✓	10/12/2021	Brick
95	0123 ✓	10/12/2021	Brick
96	0124 ✓	10/12/2021	Brick
97	0125 ✓	10/12/2021	Brick
98	0126 ✓	10/12/2021	Brick
99	0127 ✓	10/12/2021	Brick
100	0128 ✓	10/12/2021	Brick
101	0129 ✓	10/12/2021	Brick
102	0130 ✓	10/12/2021	Brick
103	0131 ✓	10/12/2021	Brick
104	0132 ✓	10/12/2021	Brick
105	0133 ✓	10/12/2021	Brick
106	0134 ✓	10/12/2021	Brick
107	0135 ✓	10/12/2021	Brick
108	0136 ✓	10/12/2021	Brick
109	0137 ✓	10/12/2021	Brick
110	0138 ✓	10/12/2021	Brick
111	0139 ✓	10/12/2021	Brick
112	0140 ✓	10/12/2021	Brick
113	0141 ✓	10/12/2021	Brick
114	0142 ✓	10/12/2021	Brick
115	0143 ✓	10/12/2021	Brick
116	0144 ✓	10/12/2021	Brick
117	0145 ✓	10/12/2021	Brick
118	0146 ✓	10/12/2021	Brick
119	0147 ✓	10/12/2021	Brick
120	0148 ✓	10/12/2021	Brick
121	0149 ✓	10/12/2021	Brick
122	0150 ✓	10/12/2021	Brick
123	0151 ✓	10/12/2021	Brick
124	0152 ✓	10/12/2021	Brick
125	0153 ✓	10/12/2021	Brick
126	0154 ✓	10/12/2021	Brick
127	0155 ✓	10/12/2021	Brick
128	0156 ✓	10/12/2021	Brick
129	0157 ✓	10/12/2021	Brick
130	0158 ✓	10/12/2021	Brick
131	0159 ✓	10/12/2021	Brick
132	0160 ✓	10/12/2021	Brick
133	0161 ✓	10/12/2021	Brick
134	0162 ✓	10/12/2021	Brick
135	0163 ✓	10/12/2021	Brick
136	0164 ✓	10/12/2021	Brick
137	0165 ✓	10/12/2021	Brick
138	0166 ✓	10/12/2021	Brick
139	0167 ✓	10/12/2021	Brick
140	0168 ✓	10/12/2021	Brick
141	0169 ✓	10/12/2021	Brick
142	0170 ✓	10/12/2021	Brick
143	0171 ✓	10/12/2021	Brick
144	0172 ✓	10/12/2021	Brick
145	0173 ✓	10/12/2021	Brick
146	0174 ✓	10/12/2021	Brick
147	0175 ✓	10/12/2021	Brick
148	0176 ✓	10/12/2021	Brick
149	0177 ✓	10/12/2021	Brick
150	0178 ✓	10/12/2021	Brick
151	0179 ✓	10/12/2021	Brick
152	0180 ✓	10/12/2021	Brick
153	0181 ✓	10/12/2021	Brick
154	0182 ✓	10/12/2021	Brick
155	0183 ✓	10/12/2021	Brick
156	0184 ✓	10/12/2021	Brick
157	0185 ✓	10/12/2021	Brick
158	0186 ✓	10/12/2021	Brick
159	0187 ✓	10/12/2021	Brick
160	0188 ✓	10/12/2021	Brick
161	0189 ✓	10/12/2021	Brick
162	0190 ✓	10/12/2021	Brick
163	0191 ✓	10/12/2021	Brick
164	0192 ✓	10/12/2021	Brick
165	0193 ✓	10/12/2021	Brick
166	0194 ✓	10/12/2021	Brick
167	0195 ✓	10/12/2021	Brick
168	0196 ✓	10/12/2021	Brick
169	0197 ✓	10/12/2021	Brick
170	0198 ✓	10/12/2021	Brick
171	0199 ✓	10/12/2021	Brick
172	0200 ✓	10/12/2021	Brick
173	0201 ✓	10/12/2021	Brick
174	0202 ✓	10/12/2021	Brick
175	0203 ✓	10/12/2021	Brick
176	0204 ✓	10/12/2021	Brick
177	0205 ✓	10/12/2021	Brick
178	0206 ✓	10/12/2021	Brick
179	0207 ✓	10/12/2021	Brick
180	0208 ✓	10/12/2021	Brick
181	0209 ✓	10/12/2021	Brick
182	0210 ✓	10/12/2021	Brick
183	0211 ✓	10/12/2021	Brick
184	0212 ✓	10/12/2021	Brick
185	0213 ✓	10/12/2021	Brick
186	0214 ✓	10/12/2021	Brick
187	0215 ✓	10/12/2021	Brick
188	0216 ✓	10/12/2021	Brick
189	0217 ✓	10/12/2021	Brick
190	0218 ✓	10/12/2021	Brick
191	0219 ✓	10/12/2021	Brick
192	0220 ✓	10/12/2021	Brick
193	0221 ✓	10/12/2021	Brick
194	0222 ✓	10/12/2021	Brick
195	0223 ✓	10/12/2021	Brick
196	0224 ✓	10/12/2021	Brick
197	0225 ✓	10/12/2021	Brick
198	0226 ✓	10/12/2021	Brick
199	0227 ✓	10/12/2021	Brick
200	0228 ✓	10/12/2021	Brick
201	0229 ✓	10/12/2021	Brick
202	0230 ✓	10/12/2021	Brick
203	0231 ✓	10/12/2021	Brick
204	0232 ✓	10/12/2021	Brick
205	0233 ✓	10/12/2021	Brick
206	0234 ✓	10/12/2021	Brick
207	0235 ✓	10/12/2021	Brick
208	0236 ✓	10/12/2021	Brick
209	0237 ✓	10/12/2021	Brick
210	0238 ✓	10/12/2021	Brick
211	0239 ✓	10/12/2021	Brick
212	0240 ✓	10/12/2021	Brick
213	0241 ✓	10/12/2021	Brick
214	0242 ✓	10/12/2021	Brick
215	0243 ✓	10/12/2021	Brick
216	0244 ✓	10/12/2021	Brick
217	0245 ✓	10/12/2021	Brick
218	0246 ✓	10/12/2021	Brick
219	0247 ✓	10/12/2021	Brick
220	0248 ✓	10/12/2021	Brick
221	0249 ✓	10/12/2021	Brick
222	0250 ✓	10/12/2021	Brick
223	0251 ✓	10/12/2021	Brick
224	0252 ✓	10/12/2021	Brick
225	0253 ✓	10/12/2021	Brick
226	0254 ✓	10/12/2021	Brick



OPTIMUM

Analytical and Consulting, LLC

85 Stiles Road, Suite 201, Salem, NH 03079 Phone: (603)-458-5247

CLIENT: ProScience
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 CONTACT: ProScience
 DESCRIPTION: PLM Analysis
 LOCATION: SB01616

BULK SAMPLE ANALYSIS REPORT POLARIZED LIGHT MICROSCOPY

PLM (EPA-40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples, EPA-600/ R-93-116 Method for Determination of Asbestos in Bulk Building Materials) NVLAP Lab Code: 101433-0

ORDER #: 2140470
 PROJECT #: SB01616
 DATE COLLECTED: 10/12/2021
 COLLECTED BY: Client
 DATE RECEIVED: 10/26/2021
 ANALYSIS DATE: 10/27/2021
 REPORT DATE: 10/27/2021
 ANALYST: Jamie Noei

Full notes per 4.2 Update 2014 Each liter of milligram per liter will be analyzed and returned to the client.

Aerobiology 21 Cummings Park, Woburn, MA 01897 T: 781-939-2217 F: 781-939-1187 general@pecora.com	
Proj. Name PLM COC...	Proj. # SB01616
Lab (SMA) Lab (OAS)	Lab (SMA) Lab (OAS)
Date Collected 10/12/2021	Date Received 10/26/2021
Location 22 Cummings Park, Woburn, MA 01801	Analyst Jamie Noei
Sample ID SB01616	Sample ID SB01616

2140470



APPENDIX D

XRF LEAD-BASED PAINT REPORT

ENVIRONMENTAL LEAD DETECTION, INC.

LEAD-BASED PAINT TESTING



PERFORMED AT:

John Wickes Elementary School
50 Child Ln.
Warwick, RI 02886

PREPARED BY:

John Eastman
Rhode Island Lead Inspector #00004
Environmental Lead Detection, Inc.
436 Gardners Neck Rd.
Swansea, MA 02777
TEL. (774) 526-8223
ELD1988@comcast.net

EXECUTIVE SUMMARY

Enclosed is the final report for the Lead-Based Paint (LBP) testing conducted at the John Wickes Elementary School, 50 Child Ln., Warwick, Rhode Island.

Positive XRF readings for lead-based paint were identified on interior concrete window sills, metal columns, wood door casings, wood window sills, and wood window casings.

Positive XRF readings for lead-based paint were identified on exterior metal columns, metal flag pole, metal door lintel, wood door casings, wood door panels, wood upper trim, wood window casings, wood window sashes, and wood window sills.

Positive XRF readings for lead containing materials were identified on slate chalkboards and vinyl baseboard. These components test positive for lead but are not coated with lead-based paint.

1.0 PLANNING AND DESIGN

1.1 Project Background

Environmental Lead Detection, Inc., was contracted to conduct Lead-Based Paint XRF testing at John Wickes Elementary School, 50 Child Ln., Warwick, Rhode Island. The inspection took place on October 12, 2021.

1.2 Organization and Management

John Eastman, LI-00004, a Rhode Island Environmental Lead Inspector, conducted the field data collection portion of this project, the data analysis and report preparation.

1.3 Testing Objectives

The main objective of this LBP inspection was to test enough surfaces in a properly controlled manner to obtain a 95% confidence level with the results and to determine at what locations and in what concentrations LBP exists. A-wall pertains to the wall that is facing the front entry of the building and BCD sides continue clockwise.

1.4 Sampling Design

Representative painted surfaces were tested in accessible areas. Surfaces tested by XRF included:

Interior:

- Brick Wall
- Ceramic Tile Wall
- CMU Wall
- Concrete Floor
- Concrete Wall
- Concrete Window Sill
- Metal Door
- Metal Door Frame
- Metal Door Jamb
- Metal Column
- Metal Drain Pipe
- Metal Pipe
- Metal Radiator
- Metal Stall
- Metal Window Casing
- Metal Window Sash
- Plaster Ceiling
- Plaster Wall
- Slate Chalkboard
- Vinyl Baseboard
- Wood Door
- Wood Door Casing
- Wood Door Jamb
- Wood Wall
- Wood Wall Cleat
- Wood Window Apron
- Wood Window Bar
- Wood Window Casing
- Wood Window Ledge
- Wood Window Seat
- Wood Window Sill

Exterior:

- CMU Wall
- Concrete Foundation
- Concrete Overhang
- Metal Bollard
- Metal Column
- Metal Door
- Metal Door Frame
- Metal Door Jamb
- Metal Door Lintel
- Metal Door Panel
- Metal Flag Pole
- Metal I-Beam
- Metal Overhang
- Metal Window Panel
- Metal Window Sash
- Wood Door Casing
- Wood Door Panel
- Wood Overhang
- Wood Siding
- Wood Upper Trim
- Wood Window Casing
- Wood Window Sash
- Wood Window Sill

2.0 Field Sampling Equipment

2.1 Testing Methods

Under current Federal HUD guidelines, the XRF analyzer is a recognized method of in-situ lead paint testing. Initial in-situ lead paint testing was conducted using a Viken Lead in Paint Spectrum Analyzer.

The instrument employed was:

<u>Model:</u>	<u>Serial #:</u>	<u>Source date:</u>
<i>Pb200i</i>	<i>2234</i>	<i>02/25/21</i>

3.0 Data Processing and Management

Over 265 readings were taken and recorded during this project. All readings were entered onto report forms in the field. Office personnel entered the day's readings into our computerized data base management program. The following information was keyed in:

Room	Component	Side	Substrate	Color	XRF	Result
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Conclusion

Positive XRF readings for lead-based paint were identified on both interior and exterior components.

This facility is not considered a regulated facility and, therefore, Rhode Island Department of Health Regulations and the EPA RRP (Repair, Renovation and Painting) Rule would not apply.

The primary concern with lead-based paint and construction activities is related to the release of lead particles which can be toxic to workers and the general public. The only acceptable method to measure any release of toxic levels of lead into the environment is by means of on-site ambient air sampling. Neither XRF nor AAS sampling methods can determine if lead particle levels are within acceptable levels.

Lead-based paint activities performed should be in accordance with applicable Federal, State, or local laws, ordinances, codes or regulations governing evaluation and hazard reduction.

The following regulations apply to this project:

- DEM Air Pollution Control No. 5: Fugitive Dust Regulations
- OSHA 29 CFR 1926-Construction Industry Standards, 29 CFR 1926.62-Construction Industry Lead Standards, 29 CFR 1910.1200-Hazard Communication. 40 CFR 261-EPA Regulations.
- EPA Resource Conservation and Recovery Act (RCRA)

Submitted by:



John Eastman
Rhode Island Lead Inspector LI-00004
Expires on 1/31/23

XRF Data

4.0 FINDINGS

John Wickes Elementary School

XRF Data – Interior

Room	Component	Side	Substrate	Color	XRF	Results
	Calibration				0.9	
	Calibration				0.9	
	Calibration				1.0	
Area 1	Wall	A	Plaster	White	0.1	Neg
Area 1	Wall	C	CMU	White	0.0	Neg
Area 1	Baseboard	B	Vinyl	Black	0.1	Neg
Area 1	Radiator	B	Metal	Gray	-0.1	Neg
Area 1	Door	C	Metal	Tan	0.2	Neg
Area 1	Door Frame	C	Metal	Tan	0.2	Neg
Area 1	Window Sill	B	Wood	Brown	0.1	Neg
Area 1	Closet Door Casing	D	Wood	White	0.0	Neg
Area 1	Closet Door Jamb	D	Wood	White	0.1	Neg
Area 1	Chalkboard	D	Slate	Green	0.8	Neg
Area 1	Column	B	Metal	Brown	3.5	Pos
Boiler Rm 1	Ceiling		Plaster	White	0.0	Neg
Boiler Rm 1	Wall	A	Plaster	Gray	0.2	Neg
Boiler Rm 1	Wall	B	Plaster	Gray	0.0	Neg
Boiler Rm 1	Wall	C	CMU	Gray	-0.2	Neg
Boiler Rm 1	Wall	D	Plaster	Gray	0.2	Neg
Boiler Rm 1	Door	A	Metal	Blue	0.1	Neg
Boiler Rm 1	Door Frame	A	Metal	Blue	0.3	Neg
Boiler Rm 1	Drain Pipe	C	Metal	Black	0.0	Neg
Area 4	Wall	A	CMU	White	0.1	Neg
Area 4	Wall	C	Wood	Varnish	0.0	Neg
Area 4	Baseboard	A	Vinyl	Black	-0.1	Neg
Area 4	Radiator	D	Metal	Gray	0.1	Neg
Area 4	Door	A	Metal	White	0.1	Neg
Area 4	Door Frame	A	Metal	White	0.1	Neg
Area 4	Window Sill	D	Wood	Brown	0.0	Neg
Area 4	Chalkboard	C	Slate	Green	0.9	Neg
Area 4	Column	D	Metal	Brown	2.2	Pos
Corridor 1	Ceiling		Plaster	White	0.3	Neg
Corridor 1	Wall	A	CMU	White	0.2	Neg
Corridor 1	Wall	B	Tile	Tan	0.0	Neg
Corridor 1	Wall	C	CMU	White	0.1	Neg
Corridor 1	Wall	D	Plaster	White	0.2	Neg

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Room	Component	Side	Substrate	Color	XRF	Results
Corridor 1	Radiator	B	Metal	Gray	0.0	Neg
Corridor 1	Door	A	Metal	Blue	0.1	Neg
Corridor 1	Door Frame	A	Metal	Blue	0.2	Neg
Corridor 1	Door	B	Metal	White	0.0	Neg
Corridor 1	Door Casing	B	Wood	White	0.4	Neg
Corridor 1	Door Jamb	B	Metal	White	0.1	Neg
Corridor 1	Window Sill	B	Concrete	White	1.0	Pos
Corridor 1	Window Casing	B	Metal	White	0.4	Neg
Corridor 1	Window Int. Sash	B	Metal	White	0.2	Neg
Boy's Bath 1	Ceiling		Plaster	White	0.2	Neg
Boy's Bath 1	Wall	A	CMU	White	0.0	Neg
Boy's Bath 1	Wall	B	Tile	Tan	0.2	Neg
Boy's Bath 1	Wall	C	CMU	White	0.1	Neg
Boy's Bath 1	Wall	D	Tile	Tan	0.2	Neg
Boy's Bath 1	Door	C	Wood	Gray	0.0	Neg
Boy's Bath 1	Door Frame	C	Metal	Gray	0.0	Neg
Boy's Bath 1	Window Casing	B	Metal	Blue	0.2	Neg
Boy's Bath 1	Window Int. Sash	B	Metal	Blue	0.3	Neg
Boy's Bath 1	Stall	D	Metal	Gray	0.0	Neg
Boy's Bath 1	Column	B	Metal	White	0.6	Neg
Area 7	Wall	B	Plaster	White	0.2	Neg
Area 7	Wall	B	CMU	Blue	0.1	Neg
Area 7	Wall	B	Tile	Tan	0.2	Neg
Area 7	Baseboard	B	Vinyl	Black	0.4	Neg
Area 7	Radiator	D	Metal	Gray	0.1	Neg
Area 7	Door Frame	B	Metal	Blue	0.1	Neg
Area 7	Chalkboard	A	Slate	Green	9.1	Pos
Custodian	Ceiling		Plaster	White	0.0	Neg
Custodian	Wall	A	Brick	Gray	0.0	Neg
Custodian	Wall	B	CMU	Gray	0.0	Neg
Custodian	Wall	C	CMU	Gray	0.2	Neg
Custodian	Wall	D	CMU	Gray	0.1	Neg
Custodian	Floor		Concrete	Gray	0.1	Neg
Custodian	Door	B	Metal	Gray	0.1	Neg
Custodian	Door Casing	B	Wood	Gray	0.5	Neg
Custodian	Door Jamb	B	Metal	Gray	0.2	Neg
Custodian	Window Sill	B	Concrete	Gray	0.8	Neg
Custodian	Window Casing	B	Wood	Gray	0.2	Neg
Custodian	Window Int. Sash	B	Metal	Gray	0.1	Neg
Custodian	Wall Cleat	A	Wood	Gray	0.3	Neg
Library	Wall	A	Plaster	White	0.1	Neg
Library	Wall	A	CMU	White	0.0	Neg

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Room	Component	Side	Substrate	Color	XRF	Results
Library	Wall	A	Tile	Tan	0.3	Neg
Library	Radiator	C	Metal	Gray	0.1	Neg
Library	Door	B	Metal	Blue	0.1	Neg
Library	Door Frame	B	Metal	Blue	0.2	Neg
Library	Column (Round)	A	Metal	White	0.1	Neg
Library	Column (Square)	B	Metal	White	6.2	Pos
Area 12	Wall	C	Tile	Tan	0.0	Neg
Area 12	Wall	D	Plaster	White	0.0	Neg
Area 12	Radiator	A	Metal	Gray	0.1	Neg
Area 12	Door	D	Metal	Blue	0.2	Neg
Area 12	Door Frame	D	Metal	Blue	0.1	Neg
Area 12	Chalkboard	C	Slate	Green	8.7	Pos
Area 12	Column	C	Metal	Tan	8.8	Pos
Area 16	Wall	A	CMU	White	0.0	Neg
Area 16	Baseboard	A	Vinyl	Black	4.4	Pos
Area 16	Radiator	B	Metal	Gray	-0.1	Neg
Area 16	Door	D	Metal	Blue	0.1	Neg
Area 16	Door Frame	D	Metal	Blue	0.7	Neg
Area 16	Window Sill	B	Wood	Brown	0.0	Neg
Area 16	Chalkboard	A	Slate	Green	2.9	Pos
Area 16	Column (Square)	A	Metal	White	0.4	Neg
Corridor 2	Ceiling		Plaster	White	0.2	Neg
Corridor 2	Wall	B	CMU	White	0.0	Neg
Corridor 2	Wall	D	Brick	White	0.2	Neg
Corridor 2	Baseboard	D	Vinyl	Gray	0.1	Neg
Corridor 2	Radiator	B	Metal	Gray	0.0	Neg
Corridor 2	Door	A	Metal	White	0.2	Neg
Corridor 2	Door Frame	A	Metal	White	0.3	Neg
Corridor 2	Door	D	Metal	Blue	0.2	Neg
Corridor 2	Door Frame	D	Metal	Blue	0.6	Neg
Boiler Rm 2	Wall	A	CMU	White	0.0	Neg
Boiler Rm 2	Wall	B	CMU	Blue	0.2	Neg
Boiler Rm 2	Door	B	Metal	Blue	0.2	Neg
Boiler Rm 2	Door Frame	B	Metal	Blue	0.6	Neg
All Purpose	Wall	A	CMU	White	0.0	Neg
All Purpose	Baseboard	A	Vinyl	Black	0.1	Neg
All Purpose	Door	A	Metal	Blue	0.0	Neg
All Purpose	Door Frame	A	Metal	Blue	0.0	Neg
All Purpose	Window Sill	D	Wood	White	3.3	Pos
All Purpose	Window Casing	D	Wood	White	4.0	Pos
All Purpose	Window Bar	D	Wood	White	0.0	Neg
All Purpose	Window Int. Sash	D	Metal	White	0.2	Neg

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Room	Component	Side	Substrate	Color	XRF	Results
All Purpose	Window Ledge	D	Wood	Brown	0.0	Neg
All Purpose	Column (Round)		Metal	Black	1.9	Pos
Kitchen	Ceiling		Plaster	White	-0.1	Neg
Kitchen	Wall	A	CMU	White	0.0	Neg
Kitchen	Wall	C	Concrete	White	0.1	Neg
Kitchen	Door	C	Metal	Blue	0.1	Neg
Kitchen	Door Frame	C	Metal	Blue	0.2	Neg
Kitchen	Door	D	Wood	Varnish	0.1	Neg
Kitchen	Door Frame	D	Metal	Tan	0.6	Neg
Kitchen	Window Sill	A	Concrete	Tan	1.0	Pos
Kitchen	Window Casing	A	Wood	Tan	0.0	Neg
Kitchen	Window Int. Sash	A	Metal	Tan	0.0	Neg
Kitchen	Column (Round)		Metal	White	1.9	Pos
Corridor 3	Wall	A	CMU	White	0.0	Neg
Corridor 3	Wall	A	Tile	Tan	0.1	Neg
Corridor 3	Baseboard	A	Vinyl	Gray	0.3	Neg
Corridor 3	Door	A	Metal	Blue	0.2	Neg
Corridor 3	Door Frame	A	Metal	Blue	0.5	Neg
Corridor 3	Door	C	Metal	White	0.0	Neg
Corridor 3	Door Casing	C	Wood	White	0.0	Neg
Corridor 3	Door Jamb	C	Metal	White	0.1	Neg
Corridor 3	Window Sill	C	Wood	White	0.9	Neg
Corridor 3	Window Apron	C	Wood	Brown	0.2	Neg
Corridor 3	Window Casing	C	Wood	White	0.6	Neg
Corridor 3	Window Int. Sash	C	Metal	White	0.1	Neg
Corridor 3	Column (Round)	C	Metal	Brown	2.1	Pos
Gym	Wall	C	CMU	White	0.2	Neg
Gym	Baseboard	C	Vinyl	Black	0.2	Neg
Gym	Door	A	Metal	Blue	0.1	Neg
Gym	Door Frame	A	Metal	Blue	0.1	Neg
Main Lobby	Wall	A	Plaster	White	0.1	Neg
Main Lobby	Wall	C	CMU	White	0.0	Neg
Main Lobby	Wall	C	Tile	Tan	-0.1	Neg
Main Lobby	Baseboard	A	Vinyl	Gray	0.0	Neg
Main Lobby	Door	A	Metal	White	0.0	Neg
Main Lobby	Door Casing	A	Wood	White	0.8	Neg
Main Lobby	Door Jamb	A	Metal	White	0.1	Neg
Main Lobby	Door	C	Metal	Blue	0.2	Neg
Main Lobby	Door Casing	C	Wood	White	1.4	Pos
Main Lobby	Door Jamb	C	Metal	White	0.1	Neg
Main Lobby	Window Int. Sash	C	Metal	White	0.1	Neg
Main Lobby	Window Bar	C	Wood	Brown	0.2	Neg

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Room	Component	Side	Substrate	Color	XRF	Results
Main Lobby	Window Seat	C	Wood	Brown	0.1	Neg
Main Lobby	Column	C	Metal	Brown	1.6	Pos
Area 18	Wall	A	Plaster	White	0.0	Neg
Area 18	Wall	A	CMU	Blue	0.0	Neg
Area 18	Wall	A	Tile	Tan	0.0	Neg
Area 18	Radiator	C	Metal	Gray	0.0	Neg
Area 18	Chalkboard	D	Slate	Green	7.5	Pos
Area 18	Column (Square)	D	Metal	Gray	5.1	Pos
Area 20	Wall	A	Plaster	White	0.1	Neg
Area 20	Wall	A	CMU	Blue	0.1	Neg
Area 20	Wall	A	Tile	Tan	0.0	Neg
Area 20	Baseboard	A	Vinyl	Black	0.1	Neg
Area 20	Radiator	C	Metal	Gray	0.2	Neg
Area 20	Door	A	Metal	Blue	0.1	Neg
Area 20	Door Frame	A	Metal	Blue	0.2	Neg
Area 20	Chalkboard	D	Slate	Green	7.3	Pos
Area 20	Column (Square)	D	Metal	Gray	5.3	Pos
Kindergarten	Wall	A	CMU	Blue	0.1	Neg
Kindergarten	Wall	B	Tile	Tan	0.2	Neg
Kindergarten	Baseboard	A	Vinyl	Black	0.4	Neg
Kindergarten	Door	B	Metal	Blue	0.0	Neg
Kindergarten	Door Casing	B	Wood	Varnish	0.1	Neg
Kindergarten	Door	C	Metal	Beige	0.2	Neg
Kindergarten	Door Frame	C	Metal	Beige	0.1	Neg
Kindergarten Bath	Door	B	Wood	Varnish	0.0	Neg
Kindergarten Bath	Door Frame	B	Metal	Blue	0.6	Neg
Kindergarten Bath	Wall	A	Tile	Blue	0.3	Neg
Kindergarten	Column (Round)	C	Metal	Brown	2.3	Pos
Area 21 Primary	Wall	A	CMU	Pink	-0.1	Neg
Area 21 Primary	Wall	C	Brick	Pink	0.0	Neg
Area 21 Primary	Baseboard	C	Vinyl	Gray	0.2	Neg
Area 21 Primary	Radiator	C	Metal	Gray	0.1	Neg
Area 21 Primary	Door	B	Wood	Varnish	0.0	Neg
Area 21 Primary	Door Frame	B	Metal	Gray	0.7	Neg
Area 21 Primary	Door	D	Metal	White	0.2	Neg
Area 21 Primary	Door Frame	D	Metal	White	0.4	Neg
Area 21 Primary	Window Sill	A	Wood	Brown	0.0	Neg
Area 21 Primary	Column (Square)	B	Metal	Gray	0.2	Neg
Area 21 Primary	Column (Square)	A	Metal	Brown	0.2	Neg
Corridor 4	Ceiling		Plaster	White	0.2	Neg
Corridor 4	Wall	B	CMU	White	0.1	Neg
Corridor 4	Wall	D	Tile	Tan	0.2	Neg

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Room	Component	Side	Substrate	Color	XRF	Results
Corridor 4	Baseboard	B	Vinyl	Gray	0.1	Neg
Corridor 4	Door	A	Metal	Beige	0.2	Neg
Corridor 4	Door	C	Metal	Blue	0.2	Neg
Corridor 4	Door Frame	C	Metal	Blue	0.4	Neg
Corridor 4	Closet Door	B	Wood	Varnish	0.0	Neg
Corridor 4	Closet Door Frame	B	Metal	Brown	0.6	Neg
Corridor 4	Drain Pipe	B	Metal	Gray	0.2	Neg
Corridor 4	Column (Round)	D	Metal	Gray	2.2	Pos
Girl's Bath 2	Wall	D	CMU	Green	0.0	Neg
Girl's Bath 2	Wall	D	Tile	Tan	0.2	Neg
Girl's Bath 2	Door	D	Metal	Green	0.2	Neg
Girl's Bath 2	Door Frame	D	Metal	White	0.4	Neg
Girl's Bath 2	Stall	B	Metal	Green	0.1	Neg
Girl's Bath 2	Pipe	A	Metal	Green	0.0	Neg
Girl's Bath 2	Column (Round)	A	Metal	Green	0.6	Neg
Office	Ceiling		Plaster	White	0.3	Neg
Office	Wall	C	Plaster	White	0.2	Neg
Office	Wall	D	CMU	White	0.2	Neg
Office	Baseboard	D	Vinyl	Gray	0.0	Neg
Office	Radiator	A	Metal	Gray	0.3	Neg
Office	Door	C	Metal	Brown	0.0	Neg
Office	Door Frame	C	Metal	Brown	0.2	Neg
Office	Window Casing	B	Metal	Blue	0.1	Neg
Office	Column (Round)	C	Metal	Brown	14.5	Pos

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XRF Data – Exterior

Room	Component	Side	Substrate	Color	XRF	Result
Exterior Courtyard	Overhang	D	Wood	White	0.2	Neg
Exterior Courtyard	Upper Trim	D	Wood	White	2.0	Pos
Exterior Courtyard	Upper Siding	B	Wood	Red	0.0	Neg
Exterior Courtyard	Door	D	Metal	Blue	0.0	Neg
Exterior Courtyard	Door Casing	D	Wood	White	2.2	Pos
Exterior Courtyard	Door Jamb	D	Metal	White	0.1	Neg
Exterior Courtyard	Door Panel	D	Wood	White	3.1	Pos
Exterior Courtyard	Window Sill	D	Wood	White	2.1	Pos
Exterior Courtyard	Window Casing	D	Wood	White	1.4	Pos
Exterior Courtyard	Window Int. Sash	D	Metal	White	0.8	Neg
Exterior	Siding	A	CMU	Red	0.1	Neg
Exterior	Door #4	A	Metal	Brown	0.2	Neg
Exterior	Door Frame	A	Metal	Brown	0.2	Neg
Exterior	Door Lintel	A	Metal	Brown	1.4	Pos
Exterior	Door #8	A	Metal	Brown	0.2	Neg
Exterior	Door Frame	A	Metal	Brown	0.9	Neg
Exterior	Door Panel	A	Metal	Brown	0.5	Neg
Exterior	Window Panel	B	Metal	Beige	0.0	Neg
Exterior	Window Casing	B	Wood	Brown	4.7	Pos
Exterior	Window Sash	B	Metal	Brown	0.7	Neg
Exterior	Overhang	A	Metal	White	0.2	Neg
Exterior	Column	A	Metal	Red	0.1	Neg
Exterior	Foundation	A	Concrete	Gray	0.1	Neg
Exterior	I-Beam	A	Metal	Red	0.0	Neg
Exterior	Bollard	C	Metal	Beige	0.2	Neg
Exterior	Flag Pole	A	Metal	White	5.1	Pos
Exterior	Door #9	B	Metal	Gray	0.4	Neg
Exterior	Door Casing	B	Wood	Brown	6.2	Pos
Exterior	Door Jamb	B	Metal	Brown	0.7	Neg
Exterior	Door Panel	B	Wood	Brown	3.3	Pos
Exterior	Window Sill	C	Wood	Brown	1.2	Pos
Exterior	Window Casing	C	Wood	Brown	1.0	Pos
Exterior	Window Sash	C	Wood	Brown	4.6	Pos
Exterior	Overhang	A	Concrete	White	-0.1	Neg
Exterior	Column	D	Metal	Brown	1.7	Pos
Exterior	I-Beam	D	Metal	Rust	0.1	Neg
Exterior	Bollard	D	Metal	Yellow	0.3	Neg
	Calibration				1.0	
	Calibration				0.9	
	Calibration				1.0	

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4.1 XRF Data – Surfaces Found To Be Positive For LBP

Surfaces that have been identified as lead containing materials or containing lead-based paint above federal standards are listed as follows:

John Wickes Elementary School

Positive Interior XRF Data

Room	Component	Side	Substrate	Color	XRF	Results
Area 1	Column	B	Metal	Brown	3.5	Pos
Area 4	Column	D	Metal	Brown	2.2	Pos
Corridor 1	Window Sill	B	Concrete	White	1.0	Pos
Area 7	Chalkboard	A	Slate	Green	9.1	Pos
Library	Column (Square)	B	Metal	White	6.2	Pos
Area 12	Chalkboard	C	Slate	Green	8.7	Pos
Area 12	Column	C	Metal	Tan	8.8	Pos
Area 16	Baseboard	A	Vinyl	Black	4.4	Pos
Area 16	Chalkboard	A	Slate	Green	2.9	Pos
All Purpose	Window Sill	D	Wood	White	3.3	Pos
All Purpose	Window Casing	D	Wood	White	4.0	Pos
All Purpose	Column (Round)		Metal	Black	1.9	Pos
Kitchen	Window Sill	A	Concrete	Tan	1.0	Pos
Kitchen	Column (Round)		Metal	White	1.9	Pos
Corridor 3	Column (Round)	C	Metal	Brown	2.1	Pos
Main Lobby	Door Casing	C	Wood	White	1.4	Pos
Main Lobby	Column	C	Metal	Brown	1.6	Pos
Area 18	Chalkboard	D	Slate	Green	7.5	Pos
Area 18	Column (Square)	D	Metal	Gray	5.1	Pos
Area 20	Chalkboard	D	Slate	Green	7.3	Pos
Area 20	Column (Square)	D	Metal	Gray	5.3	Pos
Kindergarten	Column (Round)	C	Metal	Brown	2.3	Pos
Corridor 4	Column (Round)	D	Metal	Gray	2.2	Pos
Office	Column (Round)	C	Metal	Brown	14.5	Pos

Positive Interior XRF Data

Room	Component	Side	Substrate	Color	XRF	Result
Exterior Courtyard	Upper Trim	D	Wood	White	2.0	Pos
Exterior Courtyard	Door Casing	D	Wood	White	2.2	Pos
Exterior Courtyard	Door Panel	D	Wood	White	3.1	Pos
Exterior Courtyard	Window Sill	D	Wood	White	2.1	Pos
Exterior Courtyard	Window Casing	D	Wood	White	1.4	Pos
Exterior	Door Lintel	A	Metal	Brown	1.4	Pos
Exterior	Window Casing	B	Wood	Brown	4.7	Pos
Exterior	Flag Pole	A	Metal	White	5.1	Pos
Exterior	Door Casing	B	Wood	Brown	6.2	Pos
Exterior	Door Panel	B	Wood	Brown	3.3	Pos
Exterior	Window Sill	C	Wood	Brown	1.2	Pos
Exterior	Window Casing	C	Wood	Brown	1.0	Pos
Exterior	Window Sash	C	Wood	Brown	4.6	Pos
Exterior	Column	D	Metal	Brown	1.7	Pos

Floor Plan

FLOOR PLAN/PROPERTY SKETCH (GRID)

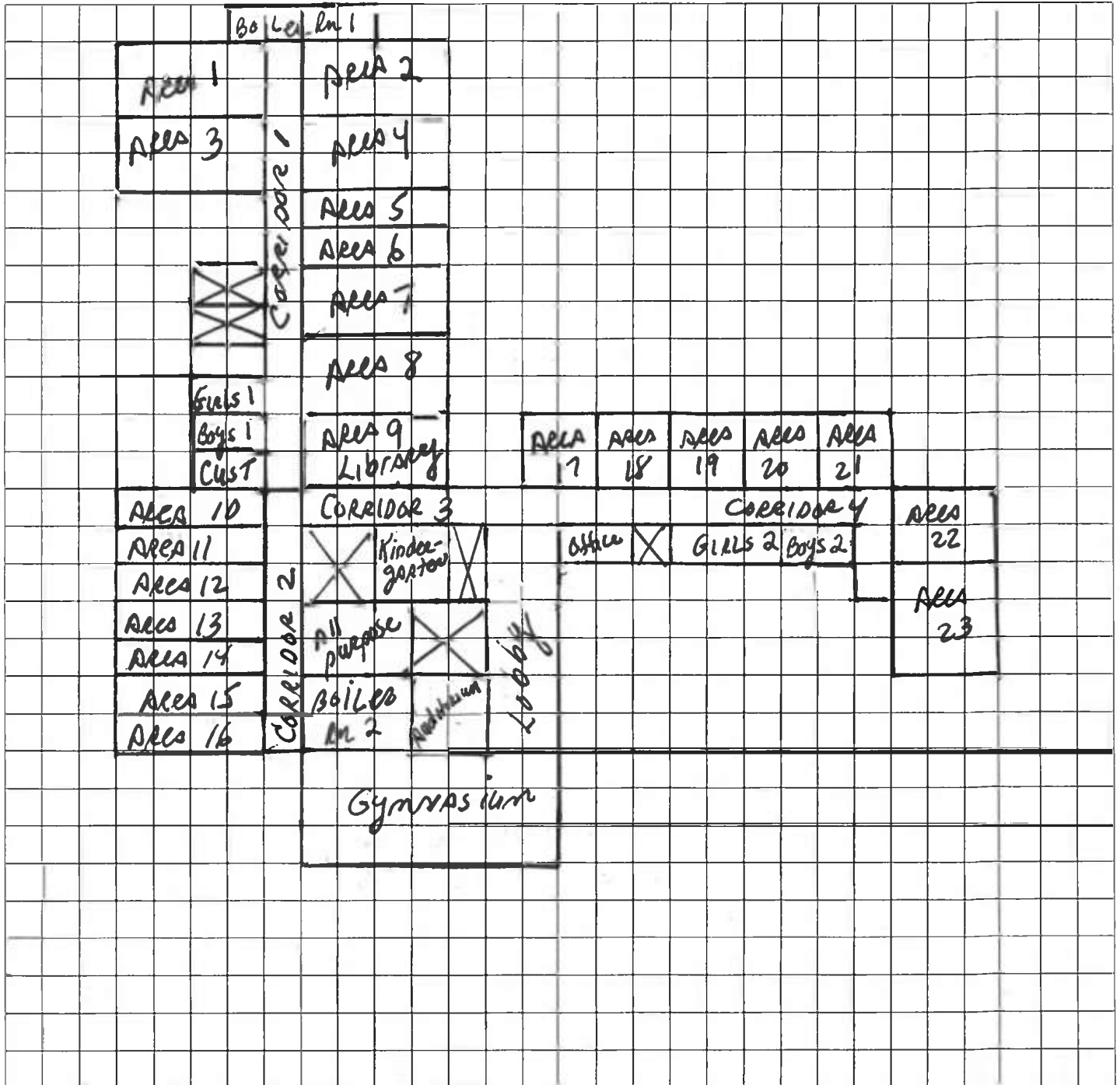
Street Address: 50 Child Lane

Unit: 1st Fl. City: Warwick

Side C

Side B

Side D



Side A (Address Street)

Lead Inspector License

Rhode Island Department of Health

Lead Program

Lead Inspector

JOHN E EASTMAN

Exp. Date: 01/31/2022

License #: LI00004

Member of C.O.N.E.S.T.





GZA GeoEnvironmental, Inc.