



George W. Nebinger Elementary School
601 Carpenter Street
Philadelphia, Pennsylvania

Asbestos Abatement Air Monitoring Report

AUGUST 23, 2018

PREPARED FOR:

School District of Philadelphia
440 North Broad Street, Room 3053
Philadelphia, Pennsylvania
Attn: Mr. Gerald Junod

PREPARED BY:

The Vertex Companies, Inc.
700 Turner Industrial Way
Aston, Pennsylvania 19014
PHONE 610.558.8902

VERTEX Project No: 51204

Work Order Numbers: 1761496, 1761497

Control No: 2018259004.1

Encumbrance Number: 583018

TABLE OF CONTENTS

- 1.0 Executive Summary
- 2.0 Project Oversight
- 3.0 Results
- 4.0 Analytical / Air Monitoring Methodologies
- 5.0 Abatement Methodologies
- 6.0 Summary of PCM Air Sampling Results
- 7.0 Summary of TEM Air Sampling Results

1.0 EXECUTIVE SUMMARY

In June 2018, The Vertex Companies, Inc. (VERTEX) was retained by the School District of Philadelphia to provide air monitoring and laboratory services in conjunction with an abatement project at the George W. Nebinger Elementary School located at 601 Carpenter in Philadelphia, PA. These services were performed under Encumbrance Number 583018, School District Control Number 2018259004.1 and Work Order Numbers 1761496 and 1761497.

Work activities were initiated in response to the newspaper article (i.e., dated May 10, 2018 online at Philly.com and May 13, 2018 in the Philadelphia Inquirer). The article reported that wipe sampling was performed by a staff member in the basement classroom. The analytical result for the single wipe sample collected yielded a level of 74,000 F/cm².

Following the review of the article and the analytical result reported, the School District of Philadelphia initiated a remedial effort to address the reported concerns. To that end, the following protocol was employed:

Initial Response

1. The School District of Philadelphia retained The Vertex Companies, Inc. (VERTEX) to consult/oversee any resulting remediation or abatement to be performed.
2. VERTEX, in conjunction with a representative of the Philadelphia Federation of Teachers, Mr. Jerry Roseman of Occupational Health Consultation Services, Inc. (OHCS) and the City of Philadelphia performed a re-inspection of the area sampled inside Classroom B1 Art room, Classroom B1 rear storage area and Classroom B1 Art room closet within rear storage area.
3. The re-inspection confirmed that asbestos containing pipe insulation was identified in the Basement Classroom B1 and adjacent storage closets.
4. A DDC was prepared by VERTEX. The DDC was utilized to define the abatement remedial effort to be employed. The scope of work included:
 - The removal of approximately 33 linear feet of pipe insulation within Classroom B1 Art room.
 - The removal of approximately 3 square feet of debris within Classroom B1 Art room.
 - The removal of approximately 38 linear feet of pipe insulation within Classroom B1 Art room rear storage area.
 - The removal of approximately 38 linear feet of pipe insulation within Classroom B1 Art room closet within rear storage area.

Abatement Redial Effort

1. Work was performed between July 24, 2018 and August 4, 2018.
2. All work was performed in full accordance with the City of Philadelphia's Asbestos Control Regulations.
3. All work was performed by members of the School District of Philadelphia's A-Team. The A-Team workers are all licensed by the City of Philadelphia and Commonwealth of Pennsylvania to perform asbestos abatement operations.
4. Daily air monitoring was performed by a licensed Asbestos Project Inspector (API) throughout the duration of the remedial effort.
5. At the completion of each work area of abatement, VERTEX's API performed a visual inspection and did not observe any dust or debris on any surfaces within the work areas.
6. The final air testing protocol employed included:
 - VERTEX and OHCS collecting five (5) samples within Classroom B1 work area location to be analyzed by Transmission Electron Microscopy (TEM).
 - VERTEX and OHCS collecting two (2) samples within the Classroom B1 Art room rear storage area work area location to be analyzed by TEM.
 - VERTEX and OHCS collecting five (5) samples within the combined Classroom B1 Art room rear storage area and Classroom B1 Art room closet within rear storage area work areas to be analyzed by TEM.
7. Analytical results of clearance testing within the Classroom B1 Art room for both VERTEX and OHCS yielded levels below the City of Philadelphia's clearance criteria and below the AHERA clearance criteria.
8. Analytical results of clearance testing within the Classroom B1 Art room rear storage area work area yielded levels above the City of Philadelphia's clearance criteria of 0.00393 AS/cc (i.e., 2 samples), and the AHERA clearance criteria <70 AS/mm².
9. Prior to abatement within the Classroom B1 Art room closet within rear storage area, that work area was combined with the failed work area in Classroom B1 Art room rear storage area, thus creating one contiguous work area.
10. The Classroom B1 Art room rear storage area was re-cleaned as part of the removal project within the Classroom B1 Art room closet within rear storage area.
11. The analytical results of clearance testing in the combined work areas for both VERTEX and OHCS yielded levels below the City of Philadelphia's clearance criteria of 0.00554 AS/cc (i.e., 5 samples), and the AHERA clearance criteria <70 AS/mm².

2.0 PROJECT OVERSIGHT

VERTEX provided an API for on-site inspection and daily air monitoring throughout the duration of the project. Services were performed by certified APIs George Steffe (certification no. 951-1008), Jeff Forester (certification no. 981-2007), Bernard Brunner (certification no. 064-0008) Ed Keegan (certification no. 911-1004) and Louis DiMichele (certification no. 991-1004). The project was managed by Donald P. Heim.



3.0 RESULTS

1. Airborne concentrations (i.e., five TEM samples) collected in Classroom B1 Art work area after abatement (final clearances) were below the City of Philadelphia's clearance criteria of 0.00554 AS/cc, and the AHERA clearance criteria <70 AS/mm².
2. Airborne concentrations (i.e., five TEM samples) collected in the combined work areas after abatement (final clearances) were below the City of Philadelphia's clearance criteria of 0.00554 AS/cc, and the AHERA clearance criteria <70 AS/mm². Note: Initial testing incorporated the collection of 2 TEM samples in the rear storage area. Analytical results obtained by VERTEX and OHCS failed to achieve the clearance criteria.
3. Airborne concentrations collected outside the regulated work areas during abatement activities (perimeters) yielded levels below 0.01 F/cc.
4. Airborne concentrations collected inside the regulated work areas during abatement activities also yielded levels below 0.01 F/cc.

Please refer to the attached PCM Air Sampling Results, for a summary of the air sample results.

4.0 ANALYTICAL / AIR MONITORING METHODOLOGIES

Phase Contrast Microscopy (PCM) air samples were collected and analyzed in accordance with the National Institute of Safety and Health (NIOSH) Analytical Method #7400, "Asbestos Fibers in Air," using A counting rules. A segment of the collected sample filter is mounted on a slide, treated chemically to make the filter transparent, and then examined using a special microscope reticule and counting procedure with phase contrast illumination at 400 to 500 magnification. Any particle having a length to width (or aspect) ratio greater than 3:1, and a length of 5 micrometers (µm) or greater is counted as a fiber. PCM analysis does not distinguish between asbestos and non-asbestos fibers.

All air samples were collected by the high-volume method in which a pump is used to draw a volume of air through a membrane filter at a known rate. Typical sampling rates for final air testing are less than 10 Liters per minute (L/min) for approximately 1200-1,800 liters. Samples are collected in 25-millimeter (mm) cassettes containing a mixed cellulose ester (MCE) filter with a 0.8 µm-effective pore size for PCM analysis.

Final clearance air samples were collected and analyzed by Transmission Electron Microscopy (TEM). Analysis was performed by both EMSL Analytical, Inc. of Cinnaminson, New Jersey and International Asbestos Testing Laboratories (IATL) of Mount Laurel, New Jersey (AIHA #100188).

5.0 ABATEMENT METHODOLOGIES

Abatement was performed by Commonwealth of Pennsylvania/City of Philadelphia licensed asbestos abatement workers. All licensed workers donned proper personal protective (PPE) equipment, including but not limited to TYVEK[®] suits and NIOSH approved half-face air purifying respirators.

Critical barriers consisting of two layers of plastic sheeting were used to seal over all openings in the work areas and prevent airborne asbestos from migrating to adjacent areas.

A Negative Pressure Enclosure (NPE) was constructed and consisted of two layers of six mil plastic sheeting on the walls and floor. Negative pressure was achieved by ventilating the contained area utilizing HEPA air filtration devices (AFDs). AFDs were utilized to achieve a minimum of four air changes per hour within the enclosure and a minimum of 0.02 column inches of water pressure differential.

An airlock was established at the entrance to the NPE and entrance to the airlock was controlled using a single-stage personal decontamination system, containing plastic doorways. The integrity of these barriers was checked visually, and negative pressure was monitored, utilizing smoke tube measurements. A remote three-stage decontamination was established.

The pipe insulation removal process consisted of pre-wetting of the pipe insulation, taping the glovebag to the pipe, re-wetting of the asbestos insulation, cutting metal bands, removing the insulation, wetting the insulation in the glovebag, wet wiping of the pipe, followed by glovebag removal. A HEPA vacuum was utilized to establish negative pressure inside the glovebags prior to removal. All bags were double bagged for disposal as asbestos waste.

At the completion of abatement operations, final air testing incorporated TEM methodologies. All clearance samples performed by VERTEX and OHCS yielded levels below applicable clearance criteria within Classroom B1.

Note: Initial clearance testing performed by VERTEX and OHCS within the B1 Classroom Art room rear storage area yielded levels which exceeded the clearance criteria. As a result, the work area was combined with the work area created for the Classroom B1 Art room closet within the rear storage area. The impacted area was re-cleaned and re-encapsulated. Re-testing of the work area found levels below the applicable clearance criteria by both VERTEX and OHCS.

Following the completion of the abatement operations, all waste generated as part of the removal project was double-bagged and labeled for proper disposal at an EPA approved landfill. Asbestos waste will be transported by Super Kwik, a licensed waste transporter, and disposed of Dauphin Meadows, an EPA approved landfill.

6.0 SUMMARY OF PCM AIR SAMPLING RESULTS

George W. Nebinger Elementary School 601 Carpenter Street Philadelphia, Pennsylvania				
Sample #	Sample Location/Activity	Volume (L)	Fibers per 100 Fields	Sample Result (F/cc)
Date collected: 7/24/18				
Site Activity/Work Area: Baseline PCM Sampling Classroom B1				
7.24.01	Baseline sample Classroom B1 – north end	1218	15	0.006
7.24.02	Baseline sample Classroom B1 – east end	1208	12	0.004
7.24.03	Baseline sample Classroom B1 – south end	1218	10	0.004
7.24.04	Baseline sample Classroom B1 – west end	1218	13	0.005
7.24.05	Baseline sample Classroom B1 - center	1218	11	0.004
7.24.06	Blank	-	0	-
Date collected: 7/24/18				
Site Activity/Work Area: O&M Wrap Throughout Building				
7.24.01	4 th floor center hallway	1210	13	0.005
7.24.02	3 rd floor center hallway	1210	8	0.003
7.24.03	2 nd floor center hallway	1215	11	0.004
7.24.04	1 st floor center hallway	1215	12	0.005
7.24.05	Basement hallway north side	1350	10	0.004
7.24.06	Boiler room	1355	9	0.03
7.24.07	Boiler room storage room	1360	13	0.0052
7.24.08	Small kitchen adjacent to gym	1360	10	0.004
7.24.09	Basement hallway south side	1365	7	0.002
7.24.10	Blank	-	0	-
Date collected: 7/25/18				
Site Activity/Work Area: O&M Wrap/Floor Tile Removal				
7.25.01	Inside boiler room storage area east wall	1170	15	0.006
7.25.02	Boiler room south wall	1176	11	0.004
7.25.03	Boiler room west wall	1179	14	0.006
7.25.04	Room B1 next to entrance	1281	8	0.003
7.25.05	Room B1 next to bathroom door	1288	11	0.004
7.25.06	Blank	-	0	-
Date collected: 7/26/18				
Site Activity/Work Area: Prep for B1 for Pipe Insulation Encapsulation				
7.26.01	Perimeter: 1 st floor hall at auditorium	1863	4.5	<0.001
7.26.02	Perimeter: 1 st floor hall at stairs to work area	1098	5	<0.002
7.26.03	Perimeter: Bottom of stairs (basement) to work area	1092	5.5	0.002
7.26.04	Perimeter: In hall, outside Classroom B1	1995	7.5	0.002
7.26.05	Work area: Classroom B1 at pipe	1986	11.5	0.003
7.26.06	Blank	-	0	-

George W. Nebinger Elementary School 601 Carpenter Street Philadelphia, Pennsylvania				
Sample #	Sample Location/Activity	Volume (L)	Fibers per 100 Fields	Sample Result (F/cc)
Date collected: 7/27/18				
Site Activity/Work Area: O&M Pipe Wrap Classroom B1 along South Side Wall				
7.27.01	Next to entrance to Classroom B1	1212	9	0.004
7.27.02	Southeast corner of containment	1208	13	0.005
7.27.03	Next to entrance to Classroom B1	1332	6	0.002
7.27.04	Southeast corner of containment	1328	12	0.004
7.27.05	Blank	-	0	-
Date collected: 7/28/18				
Site Activity/Work Area: Enclosure Removal – Basement Classroom B1 Art Room & Storage Area				
7.28.01	Perimeter: 1 st floor hallway	1380	4	<0.002
7.28.02	Perimeter: Basement hallway outside Classroom B1	1377	4.5	<0.002
7.28.03	Perimeter: In Classroom B1 at entrance	1368	5.5	0.002
7.28.04	Perimeter: In Classroom B1 at storage room door	1365	6.5	0.002
7.28.05	Change room: Decon unit in Classroom B1	11113	9	0.004
7.28.06	Work area: Rear storage area	1230	14	0.006
7.28.07	Air Quality Test: Basement hallway	1235	5	<0.002
7.28.08	Air Quality Test: Basement hallway	1235	3.5	<0.002
7.28.09	Blank	-	0	-
Date collected: 7/29/18				
Site Activity/Work Area: Rear Storage Room ACPI Glovebag Removal by Tented Glovebag Technique				
7.29.01	Entrance to Classroom B1	1210	10	0.004
7.29.02	South/west Classroom wall	1210	7	0.003
7.29.03	Storage closet 3ft from work area	1205	14	0.06
7.29.04	Inside tented glovebag containment	1080	15	0.007
7.29.05	Entrance to Classroom B1	1278	9	0.003
7.29.06	South/west classroom wall	1272	11	0.004
7.29.07	Storage closet 3ft from work area	1278	10	0.004
7.28.08	Blank	-	0	-

George W. Nebinger Elementary School 601 Carpenter Street Philadelphia, Pennsylvania				
Sample #	Sample Location/Activity	Volume (L)	Fibers per 100 Fields	Sample Result (F/cc)
Date collected: 7/30/18				
Site Activity/Work Area: Prep for ACPI Removal Middle Storage Closet				
7.30.01	Entrance to Classroom B1	1215	11	0.004
7.30.02	South center wall	1210	8	0.003
7.30.03	Entrance to storage closet	1210	13	0.005
7.30.04	Entrance to Classroom B1	1328	10	0.004
7.30.05	South center wall	1328	5	0.005
7.30.06	Entrance to storage closet	1332	9	0.003
7.30.07	Blank	-	0	-
Date collected: 8/1/18				
Site Activity/Work Area: Middle Storage Closet Tented Glovebag Removal				
8.1.01	Entrance to Classroom B1	1212	6	0.002
8.1.02	Entrance to Classroom B1 closet	1208	4.5	<0.002
8.1.03	Entrance to Classroom B1	1360	4	<0.002
8.1.04	Entrance to Classroom B1 closet	1344	3.5	<0.002
8.1.05	Blank	-	0	-
Date collected: 8/2/18				
Site Activity/Work Area: Re-Cleaning Storage Areas				
9338	Perimeter: Classroom B1	1350	7.5	0.003
9341	Field Blank	-	0	-
9342	Lab Blank	-	0	-

7.0 SUMMARY OF TEM AIR SAMPLING RESULTS

**EMSL Analytical, Inc.**

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

EMSL Order: 041823137
 CustomerID: VRTX78
 CustomerPO:
 ProjectID:

Attn: **Don Heim**
The Vertex Companies, Inc.
700 Turner Way, Suite 105
Aston, PA 19014

Phone: (610) 558-8902
 Fax: (610) 558-8904
 Received: 07/31/18 6:10 PM
 Analysis Date: 8/1/2018
 Collected: 7/31/2018

Project: 51204

Test Report: Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM)
Performed by EPA 40 CFR Part 763 Appendix A to Subpart E

Sample	Location	Volume (Liters)	Non Asb	Area Analyzed (mm ²)	Asbestos Type(s)	# Structure		Analytical Sensitivity (S/cc)	Asbestos Concentration	
						≥ 0.5μ -5μ	≥ 5μ		(S/mm ²)	(S/cc)
F-01 041823137-0001	Classroom B1 Tented Glue Bag Removal	1802.00	0	0.0516	None Detected			0.0041	<19.00	<0.0041
F-02 041823137-0002	Classroom B1 Tented Glue Bag Removal	1818.00	0	0.0516	None Detected			0.0041	<19.00	<0.0041
F-03 041823137-0003	Classroom B1 Tented Glue Bag Removal	1818.00	0	0.0516	None Detected			0.0041	<19.00	<0.0041
F-04 041823137-0004	Classroom B1 Tented Glue Bag Removal	1802.00	0	0.0516	None Detected			0.0041	<19.00	<0.0041
F-05 041823137-0005	Classroom B1 Tented Glue Bag Removal	1802.00	0	0.0516	None Detected			0.0041	<19.00	<0.0041

Geometric Mean (S/cc): 0.00205

Analyst(s)

Garret Vliet (5)

Benjamin Ellis, Laboratory Manager
 or other approved signatory

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

Initial report from 08/01/2018 14:38:43



EMSL Analytical, Inc.

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

EMSL Order: 041823137
CustomerID: VRTX78
CustomerPO:
ProjectID:

Attn: **Don Heim**
The Vertex Companies, Inc.
700 Turner Way, Suite 105
Aston, PA 19014

Phone: (610) 558-8902
Fax: (610) 558-8904
Received: 07/31/18 6:10 PM
Analysis Date: 8/1/2018
Collected: 7/31/2018

Project: 51204

Test Report: Asbestos Fiber Analysis by Transmission Electron Microscopy (TEM)
Performed by EPA 40 CFR Part 763 Appendix A to Subpart E

Sample	Location	Volume (Liters)	Non Asb	Area Analyzed (mm ²)	Asbestos Type(s)	# Structure ≥ 0.5μ - 5μ	# Structure ≥ 5μ	Analytical Sensitivity (S/cc)	Asbestos Concentration (S/mm ²)	Asbestos Concentration (S/cc)
F-06 041823137-0006	Room B1 Rear Storage Room / Bag Tented	1802.00	0	0.0645	Chrysotile	6	5	0.0033	170.00	0.0360
F-07 041823137-0007	Room B1 Rear Storage Room / Bag Tented	1818.00			Not Analyzed					

Analysis terminated per AHERA regulations.

Geometric Mean (S/cc): 0.03600

Analyst(s)
Garret Vliet (1)


Benjamin Ellis, Laboratory Manager
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. EMSL is not responsible for data reported in structures/cc, which is dependent on volume collected by non-laboratory personnel. Samples received in good condition unless otherwise noted. The test results meet the requirements of NELAC unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request.
Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036, PA ID# 68-00367

Initial report from 08/01/2018 14:39:49

CERTIFICATE OF ANALYSIS

Client: The Vertex Companies, Inc.
700 Turner Way, Suite 105
ASTON PA 19014

Report Date: 8/5/2018
Report No.: 569919 - TEM AHERA
Project: PSD Nebinger Elementary School
Project No.: 51207

Client: VER100

TEM AIR SAMPLE ANALYSIS SUMMARY

Lab No.: 6574820 Volume: 1805.0 L Density (s/mm³): <19.2
Client No.: Neb-080401 Location: IWA-Art Room Rear Back Closet Concentration (s/cc): <0.0041
Date Sampled: 8/4/18 Asbestos Type(s): None Detected

Lab No.: 6574821 Volume: 1805.0 L Density (s/mm³): <19.2
Client No.: Neb-080402 Location: IWA-Art Room Rear Back Closet Concentration (s/cc): <0.0041
Date Sampled: 8/4/18 Asbestos Type(s): None Detected


Lab No.: 6574822 Volume: 1805.0 L Density (s/mm³): <19.2
Client No.: Neb-080403 Location: IWA-Art Room Rear Hall Concentration (s/cc): <0.0041
Date Sampled: 8/4/18 Asbestos Type(s): None Detected

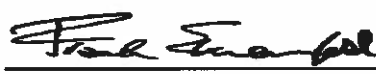
Lab No.: 6574823 Volume: 1805.0 L Density (s/mm³): <19.2
Client No.: Neb-080404 Location: IWA-Art Room Rear Front Closet Concentration (s/cc): <0.0041
Date Sampled: 8/4/18 Asbestos Type(s): None Detected

Lab No.: 6574824 Volume: 1805.0 L Density (s/mm³): <19.2
Client No.: Neb-080405 Location: IWA-Art Room Rear Front Closet Concentration (s/cc): <0.0041
Date Sampled: 8/4/18 Asbestos Type(s): None Detected

Geo Mean: Geometric Mean = 0.0041 Structures/cc

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/4/2018
Date Analyzed: 08/05/2018
Signature: 
Analyst: Jhoon Jeon

Approved By: 
Frank E. Ehrenfeld, III
Laboratory Director

CERTIFICATE OF ANALYSIS

Client: The Vertex Companies, Inc.
700 Turner Way, Suite 105
ASTON PA 19014

Report Date: 8/5/2018
Report No.: 569919 - TEM AHERA
Project: PSD Nebinger Elementary School
Project No.: 51207

Client: VER100

Appendix to Analytical Report:

Customer Contact: Don Heim
Method: 40 CFR 763 Final Rule

This appendix seeks to promote greater understanding of any observations, exceptions, special instructions, or circumstances that the laboratory needs to communicate to the client concerning the above samples. The information below is used to help promote your ability to make the most informed decisions for you and your customers. Please note the following points of contact for any questions you may have.

iATL Customer Service: customerservice@iatl.com
iATL Office Manager: cdavis@iatl.com
iATL Account Representative: Pete Lesniak
Sample Matrix: Air Cassettes

General Terms, Warrants, Limits, Qualifiers:

General information about iATL capabilities and client/laboratory relationships and responsibilities are spelled out in iATL policies that are listed at www.iATL.com and in our Quality Assurance Manual per ISO 17025 standard requirements. The information therein is a representation of iATL definitions and policies for turnaround times, sample submittal, collection media, blank definitions, quantification issues and limit of detection, analytical methods and procedures, sub-contracting policies, results reporting options, fees, terms, and discounts, confidentiality, sample archival and disposal, and data interpretation.

iATL warrants the test results to be of a precision normal for the type and methodology employed for each sample submitted. iATL disclaims any other warrants, expressed or implied, including warranty of fitness for a particular purpose and warranty of merchantability. iATL accepts no legal responsibility for the purpose for which the client uses test results. Any analytical work performed must be governed by our Standard Terms and Conditions. Prices, methods and detection limits may be changed without notification. Please contact your Customer Service Representative for the most current information.

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Information Pertinent to this Report:

Analysis by 40 CFR 763 Final Rule

Certifications:

- NIST-NVLAP No. 101165-0
- NYSDOH-ELAP No. 11021

All results are based on the samples as received at the lab. iATL assumes that appropriate sampling methods have been used and that the data upon which these results are based have been accurately supplied by the client.

Detection Limit (Reporting Limit) is dependent upon the volume of air sampled. AHERA guidelines recommend a minimum of 1200 L (0.0049 s/cc).

Disclaimers / Qualifiers:

There may be some samples in this project that have a "NOTE:" associated with a sample result. We use added disclaimers or qualifiers to inform the client about something that requires further explanation.

CERTIFICATE OF ANALYSIS

Client: The Vertex Companies, Inc.
700 Turner Way, Suite 105
ASTON PA 19014

Report Date: 8/5/2018
Report No.: 569919 - TEM AHERA
Project: PSD Nebinger Elementary School
Project No.: 51207

Client: VER100

TEM AIR SAMPLE ANALYSIS DETAILS

Lab No.: 6574820
Client No.: Neb-080401

Volume (L): 1805.0 L
Date Sampled: 8/4/18
Location: IWA-Art Room Rear Back Closet

Filter Type: MCE
Filter Size (mm²): 385
Pore Size (µm): 0.45

Grid Openings: 4
Opening Area (mm²): 0.013
Area Analyzed (mm²): 0.0520
Sensitivity (s/mm²): 19.2
Detection Limit (s/cc): 0.0041

Asbestos Structures: None Detected

Structures 0.5 µm to <5.0 µm: None Detected
Structures ≥ 5.0 µm: None Detected
Structure Density (s/mm²): <19.2
Structure Concentration (s/cc): <0.0041
Asbestos Type(s): None Detected

Non-Asbestos Structures: None Detected

Structure Density (s/mm²): <19.2
Structure Concentration (s/cc): <0.0041
Non-Asbestos Type(s): None Detected

Micrograph Number:
EDXA Spectrum ID:

Lab No.: 6574821
Client No.: Neb-080402

Volume (L): 1805.0 L
Date Sampled: 8/4/18
Location: IWA-Art Room Rear Back Closet

Filter Type: MCE
Filter Size (mm²): 385
Pore Size (µm): 0.45

Grid Openings: 4
Opening Area (mm²): 0.013
Area Analyzed (mm²): 0.0520
Sensitivity (s/mm²): 19.2
Detection Limit (s/cc): 0.0041

Asbestos Structures: None Detected

Structures 0.5 µm to <5.0 µm: None Detected
Structures ≥ 5.0 µm: None Detected
Structure Density (s/mm²): <19.2
Structure Concentration (s/cc): <0.0041
Asbestos Type(s): None Detected

Non-Asbestos Structures: None Detected

Structure Density (s/mm²): <19.2
Structure Concentration (s/cc): <0.0041
Non-Asbestos Type(s): None Detected

Micrograph Number:
EDXA Spectrum ID:

Lab No.: 6574822
Client No.: Neb-080403

Volume (L): 1805.0 L
Date Sampled: 8/4/18
Location: IWA-Art Room Rear Hall

Filter Type: MCE
Filter Size (mm²): 385
Pore Size (µm): 0.45

Grid Openings: 4
Opening Area (mm²): 0.013
Area Analyzed (mm²): 0.0520
Sensitivity (s/mm²): 19.2
Detection Limit (s/cc): 0.0041

Asbestos Structures: None Detected


Structures 0.5 µm to <5.0 µm: None Detected
Structures ≥ 5.0 µm: None Detected
Structure Density (s/mm²): <19.2
Structure Concentration (s/cc): <0.0041
Asbestos Type(s): None Detected

Non-Asbestos Structures: None Detected

Structure Density (s/mm²): <19.2
Structure Concentration (s/cc): <0.0041
Non-Asbestos Type(s): None Detected

Micrograph Number:
EDXA Spectrum ID:

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/4/2018
Date Analyzed: 08/05/2018
Signature: 
Analyst: Jhoon Jeon

Approved By: 
Frank E. Ehrenfeld, III
Laboratory Director

CERTIFICATE OF ANALYSIS

Client: The Vertex Companies, Inc.
700 Turner Way, Suite 105
ASTON PA 19014

Report Date: 8/5/2018
Report No.: 569919 - TEM AHERA
Project: PSD Nebinger Elementary School
Project No.: 51207

Client: VER100

TEM AIR SAMPLE ANALYSIS DETAILS

Lab No.: 6574823
Client No.: Neb-080404

Grid Openings: 4
Opening Area (mm²): 0.013
Area Analyzed (mm²): 0.0520
Sensitivity (s/mm²): 19.2
Detection Limit (s/cc): 0.0041

Volume (L): 1805.0 L
Date Sampled: 8/4/18
Location: IWA-Art Room Rear Front Closet
Asbestos Structures: None Detected

Structures 0.5 µm to <5.0 µm: None Detected
Structures ≥ 5.0 µm: None Detected
Structure Density (s/mm²): <19.2
Structure Concentration (s/cc): <0.0041
Asbestos Type(s): None Detected

Filter Type: MCE
Filter Size (mm²): 385
Pore Size (µm): 0.45

Non-Asbestos Structures: None Detected

Structure Density (s/mm²): <19.2
Structure Concentration (s/cc): <0.0041
Non-Asbestos Type(s): None Detected

Micrograph Number:
EDXA Spectrum ID:

Lab No.: 6574824
Client No.: Neb-080405

Grid Openings: 4
Opening Area (mm²): 0.013
Area Analyzed (mm²): 0.0520
Sensitivity (s/mm²): 19.2
Detection Limit (s/cc): 0.0041

Volume (L): 1805.0 L
Date Sampled: 8/4/18
Location: IWA-Art Room Rear Front Closet
Asbestos Structures: None Detected

Structures 0.5 µm to <5.0 µm: None Detected
Structures ≥ 5.0 µm: None Detected
Structure Density (s/mm²): <19.2
Structure Concentration (s/cc): <0.0041
Asbestos Type(s): None Detected

Filter Type: MCE
Filter Size (mm²): 385
Pore Size (µm): 0.45


Non-Asbestos Structures: None Detected

Structure Density (s/mm²): <19.2
Structure Concentration (s/cc): <0.0041
Non-Asbestos Type(s): None Detected

Micrograph Number:
EDXA Spectrum ID:

Geo Mean: Geometric Mean = 0.0041 Structures/cc

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/4/2018
Date Analyzed: 08/05/2018
Signature: 
Analyst: Jhoon Jeon

Approved By: 
Frank E. Ehrenfeld, III
Laboratory Director

CERTIFICATE OF ANALYSIS

Client: The Vertex Companies, Inc.
700 Turner Way, Suite 105
ASTON PA 19014

Report Date: 8/5/2018
Report No.: 569919 - TEM AHERA
Project: PSD Nebinger Elementary School
Project No.: 51207

Client: VER100