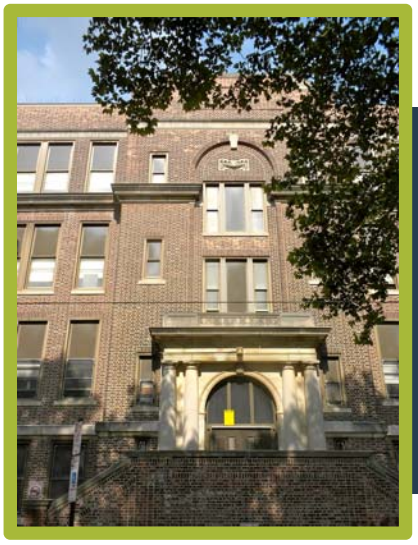

Cassidy Elementary School
6523 Lansdowne Avenue
Philadelphia, Pennsylvania

Asbestos Abatement Air Monitoring Report

AUGUST 15, 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: 51203

Work Order Numbers: 1761231

Control No: 2018424003

Encumbrance Number: 583018

TABLE OF CONTENTS

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 Cassidy Elementary School located at 6523 Lansdowne Avenue in Philadelphia, PA. These services were performed under Encumbrance Number 583018, School District Control Number 2018424003, and Work Order Number 1761231.

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 designated locations within Classroom #302 (i.e., air conditioning unit) and the Classroom #302 closet (i.e., ledge and floor). Analytical results of the wipe sampling yielded levels which ranged between 370,000 F/cm^2 – 4,070,000 F/cm^2.

Following the review of the article and the analytical results 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 directed one of its contracted consultants to inspect these areas for presence of asbestos containing materials and/or the potential source of the results reported.
2. An inspection was performed in which no asbestos containing materials were found within Classroom #302 or its closet.
3. In accordance with School District standard protocol, the building inspector prepared an Asbestos Design Data Collection (DDC).

Secondary 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) performed a re-inspection of Classroom #302 and its closet.
3. The re-inspection confirmed that no asbestos containing materials were present within Classroom #302 or its closet.
4. A revised DDC was prepared. The DDC was utilized to define the abatement remedial effort to be employed within Classroom #302 and its closet.

Abatement Redial Effort

1. Abatement operations were initiated on July 18, 2018.
2. 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.
3. All licensed workers donned proper personal protective (PPE) equipment, including but not limited to TYVEK® suits and NIOSH approved half-face air purifying respirators.
4. Daily air monitoring was performed by a licensed Asbestos Project Inspector (API) throughout the duration of the remedial effort.
5. Classroom #302/closet (work area) was regulated with critical barriers consisting of 2 layers of 6-mil plastic sheeting. Critical barriers were installed over all windows, doors, vents and other openings, etc. to or within the work area.
6. A single stage decontamination unit was established at the entrance to the work area.
7. Negative air was established within the work area.
8. All materials (i.e., furniture, supplies, stored objects, etc.) located within the work area were wet wiped, HEPA vacuumed and removed from the work area (i.e., stored in the hallway).
9. Plaster ceiling debris located on the top of suspended ceiling tiles in the classroom was HEPA vacuumed.
10. Penetrations through the plaster ceiling into the attic space above were sealed with either 6-mil poly or spray foam.
11. Damaged fiberglass pipe insulation was removed from Classroom #302 closet.
12. All surfaces (i.e., walls, floor, etc.) were wet wiped and HEPA vacuumed.
13. All waste generated as part of the removal project was double-bagged and labeled for proper disposal at an EPA approved landfill.
14. At the completion of the remedial effort on July 20, 2018, VERTEX's API performed a visual inspection and did not observe any dust or debris on any surfaces within the work area.
15. Aggressive clearance sampling was performed by both VERTEX and OHCS on July 23, 2018. All five (5) work area samples were analyzed utilizing Transmission Electron Microscopy (TEM).
16. Analytical results of clearance testing for both VERTEX and OHCS yielded levels below the City of Philadelphia's clearance criteria of 0.00554 AS/cc, and the AHERA clearance criteria <70 AS/mm^2.

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 Louis DiMichele (certification no. 991-1004), Bernard Brunner (certification no. 064-0008) and Ed Keegan (certification no.911-1004). The project was managed by Donald P. Heim.

3.0 RESULTS

1. Airborne concentrations (i.e., five samples) collected in regulated 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/mm^2.

2. Airborne concentrations collected outside the regulated work area during abatement activities (perimeters) yielded levels below 0.01 F/cc.

3. Airborne concentrations collected inside the regulated work area 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 METHODLOGIES

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 International Asbestos Testing Laboratories (IATL) of Mount Laurel, New Jersey (AIHA #100188).

5.0 SUMMARY OF PCM AIR SAMPLING RESULTS

Cassidy Elementary School 6523 Lansdowne Avenue Philadelphia, Pennsylvania				
Date collected: 7/18/18 **Site Activity/Work Area: Classroom 302 & Closet/Cleaning**				
Sample #	**Sample Location/Activity**	**Volume (L)**	**Fibers per 100 Fields**	**Sample Result (F/cc)**
7.18.01	Perimeter: Hallway outside Classroom 303	1830	14.5	0.004
7.18.02	Perimeter: Hallway outside Classroom 302	1830	5	<0.001
7.18.03	Work area: Classroom 302	1830	14	0.004
7.18.04	Work area: Classroom 302 closet	1830	9	0.002
7.18.05	Blank	-	0	-
7.18.06	Blank	-	0	-
Date collected: 7/19/18 **Site Activity/Work Area: Classroom 302 & Closet/Cleaning**				
7.19.01	Perimeter: In hall at entrance to Room #302	1266	9.5	0.004
7.19.02	Perimeter: In hall at slop sink room and entrance to attic	1260	3	<0.002
7.19.03	Work area: In classroom #302	1206	12.5	0.005
7.19.04	Blank	-	0	-
Date collected: 7/20/18 **Site Activity/Work Area: Classroom 302 & Closet/Cleaning**				
7.20.01	Perimeter: In hall at Room #302	660	3.5	<0.004
7.20.02	Perimeter: In hall at slop sink room adjacent to attic entrance	660	0	<0.004
7.20.03	Blank	-	0	-

6.0 SUMMARY OF TEM AIR SAMPLING RESULTS

iATL INTERNATIONAL
Asbestos Testing Laboratories

9000 Commerce Parkway, Suite B Mt. Laurel, NJ 08054
Telephone: 856-231-9449 Fax: 856-231-9818

PRELIMINARY RESULTS
Airborne Asbestos Analysis
TEM AHERA

Client:	Vertex	Batch No.:	568915
	700 Turner Way Suite 105	Project:	PSD Cassidy ES
	Aston PA 19014	Project No.:	51203
Client No.:	VER100	Philly Regs:	Y
		Turn-Around Time:	1 Day

Client Contacts:		Laboratory Contacts:	
Contacts:		Contacts:	Frank E. Ehrenfeld III
Phone:		Phone:	(856) 231-9449
Fax:		Fax:	(856) 231-9818
Cell/Pager:		Cell/Pager:	(609) 929-4211
E-Mail:		E-Mail:	frankehrenfeld@iatl.com

Chain of Custody:					
Samples Taken in Field:		Date:		Time:	
Samples Rec'd at Laboratory:	TM	Date:	7/23/2018	Time:	
Samples Analyzed:	M. Stewart	Date:	7/24/2018	Time:	
Preliminary Results Faxed:		Date:		Time:	
Preliminary Results E-Mail:		Date:		Time:	

Summary Data
Transmission Electron Microscopy
AHERA 40CFR 763

Client Sample ID #	IATL Sample ID #	Volume (L)	Comments	Results s/mm²	Results s/cc
CES-0723-01	6565099	1805	None Detected	< 19.2	< 0.0041
CES-0723-02	6565100	1805	None Detected	< 19.2	< 0.0041
CES-0723-03	6565101	1805	None Detected	< 19.2	< 0.0041
CES-0723-04	6565102	1805	None Detected	< 19.2	< 0.0041
CES-0723-05	6565103	1805	None Detected	< 19.2	< 0.0041

AHERA Clearance Criteria is 70 s/mm². Average (s/mm²) = 19.2
Phila. Regulations Clearance Criteria is 0.00554 s/cc Geo = 0.0041
Z Test Reults (see attached, if applicable)

Grid Box #: 1112

Instrument (I, II, III) III

These preliminary results are issued by IATL to expedite procedures by the clients based upon the above data. IATL assumes that all of the sampling methods and data upon which these results are based, has been accurately supplied by the client. These results may not have been reviewed by the Laboratory Director. Final Certificates of Analysis will follow these preliminary results. The signed COAs are to be considered the official results.

IATL International Asbestos Testing Laboratories

TEM Air Sample Worksheet

Client Name:	Vertex	**Analysis Date:** 07/24/18	**IATL Sample #:** 6565099
Client Project #:	51203		**Client Sample #:** CES-0723-01
Sample Type:	AHERA		IATL Grid Box #: 1112
QC Submittal			Grid Archive ID #: R3R5

Electron Microscope ID:	Filter Dia. (mm): 25	Magnification:	20.000X
	Effective Area (mm): 385		
III JEOL, JEM-1230, EM18440033	Filter Type: MCE	Accelerating Voltage:	100KeV
EVEX	Filter Pore Size (µm): 0.45		

Grid Opening:	0.115 mm	Volume of Air Sampled:	1805 Liters
Grid opening Area:	0.013 mm^2		
Grid Openings Read/Required:	4 4	Analytical Sensitivity:	19.2 mm^2
Total Area Analyzed:	0.0520 mm^2	Minimum Detection Limit:	0.0041 s/cc

Total **Asbestos** Structures:	NSD	Non-Asbestos Structures:	NSD
0.5µm - 5.0µm:	NSD		
>5.0µm:			
Asbestos:	< 19.2 s/mm^2	Non-Asbestos:	< 19.2 s/mm^2
Asbestos:	< 0.0041 s/cc	Non-Asbestos:	< 0.0041 s/cc

Analysis Data:

Grid Opening ID	Structure Number	Structure Type F/B/C/M	[1] Length 0.5 -5.0 µm	[2] Length > 5.0 µm	* Chrysotile	**Amphibole	***Non-Asbestos	Micrograph / EDS ID
R3 B7		NSD						
C8		NSD						
R5 E9		NSD						
D8		NSD						
Total:	NSD	NSD	0	0	0	0	0	

* Must confirm by Morphology, SAED, and EDXA for each suspect asbestos fiber
Record visible prominent Chrysotile DP reflections (002 ,004, 110, 130, 220, 200)

** Define Amphibole (DP obtained Y/N). Print-out EDS and attach.

*** Characterize by EDS

1, 2 Record Structure Length & Width (µm)

SEE REVERSE: FIBER ORIENTATION MAP

Prep Quality:	
Dissolution	Good
Carbon Film	Good
Loading	3%

Comments:

Analyzed By: M. Stewart

Reviewed By:

IATL International Asbestos Testing Laboratories

TEM Air Sample Worksheet

Client Name:	Vertex	**Analysis Date:** 07/24/18	**IATL Sample #:** 6565100
Client Project #:	51203		**Client Sample #:** CES-0723-02
Sample Type:	AHERA		IATL Grid Box #: 1112
QC Submittal			Grid Archive ID #: R7R9

Electron Microscope ID:	Filter Dia. (mm): 25	Magnification:	20.000X
	Effective Area (mm): 385		
III JEOL, JEM-1230, EM18440033	Filter Type: MCE	Accelerating Voltage:	100KeV
EVEX	Filter Pore Size (µm): 0.45		

Grid Opening:	0.115 mm	Volume of Air Sampled:	1805 Liters
Grid opening Area:	0.013 mm^2		
Grid Openings Read/Required:	4 4	Analytical Sensitivity:	19.2 mm^2
Total Area Analyzed:	0.0520 mm^2	Minimum Detection Limit:	0.0041 s/cc

Total **Asbestos** Structures:	NSD	Non-Asbestos Structures:	NSD
0.5µm - 5.0µm:	NSD		
>5.0µm:			
Asbestos:	< 19.2 s/mm^2	Non-Asbestos:	< 19.2 s/mm^2
Asbestos:	< 0.0041 s/cc	Non-Asbestos:	< 0.0041 s/cc

Analysis Data:

Grid Opening ID	Structure Number	Structure Type F/B/C/M	[1] Length 0.5 -5.0 µm	[2] Length > 5.0 µm	* Chrysotile	**Amphibole	***Non-Asbestos	Micrograph / EDS ID
R7 F8		NSD						
E9		NSD						
R9 G2		NSD						
F3		NSD						
Total:	NSD	NSD	0	0	0	0	0	

* Must confirm by Morphology, SAED, and EDXA for each suspect asbestos fiber
Record visible prominent Chrysotile DP reflections (002 ,004, 110, 130, 220, 200)

** Define Amphibole (DP obtained Y/N). Print-out EDS and attach

*** Characterize by EDS

1, 2 Record Structure Length & Width (µm)

Prep Quality:	
Dissolution	Good
Carbon Film	Good
Loading	3%

SEE REVERSE: FIBER ORIENTATION MAP

Comments: _____

Analyzed By: M. Stewart

Reviewed By: _____

IATL International Asbestos Testing Laboratories

TEM Air Sample Worksheet

Client Name:	Vertex	**Analysis Date:** 07/24/18	**IATL Sample #:** 6565101
Client Project #:	51203		**Client Sample #:** CES-0723-03
Sample Type:	AHERA		IATL Grid Box #: 1112
QC Submittal	R		Grid Archive ID #: S2S4

Electron Microscope ID:	Filter Dia. (mm): 25	Magnification:	20,000X
	Effective Area (mm): 385		
III JEOL, JEM-1230, EM18440033	Filter Type: MCE	Accelerating Voltage:	100KeV
EVEX	Filter Pore Size (µm): 0.45		

Grid Opening:	0.115 mm	Volume of Air Sampled:	1805 Liters
Grid opening Area:	0.013 mm^2		
Grid Openings Read/Required:	4 4	Analytical Sensitivity:	19.2 mm^2
Total Area Analyzed:	0.0520 mm^2	Minimum Detection Limit:	0.0041 s/cc

Total **Asbestos** Structures:	NSD	Non-Asbestos Structures:	NSD
0.5µm - 5.0µm:	NSD		
>5.0µm:			
Asbestos:	< 19.2 s/mm^2	Non-Asbestos:	< 19.2 s/mm^2
Asbestos:	< 0.0041 s/cc	Non-Asbestos:	< 0.0041 s/cc

Analysis Data:

Grid Opening ID	Structure Number	Structure Type F/B/C/M	[1] Length 0.5 -5.0 µm	[2] Length > 5.0 µm	* Chrysotile	**Amphibole	***Non-Asbestos	Micrograph / EDS ID
S2 E4		NSD						
F3		NSD						
S4 G4		NSD						
F5		NSD						
Total:	NSD	NSD	0	0	0	0	0	

* Must confirm by Morphology, SAED, and EDXA for each suspect asbestos fiber
Record visible prominent Chrysotile DP reflections (002 ,004, 110, 130, 220, 200)

** Define Amphibole (DP obtained Y/N). Print-out EDS and attach.

*** Characterize by EDS

1, 2 Record Structure Length & Width (µm)

SEE REVERSE: FIBER ORIENTATION MAP

Prep Quality:	
Dissolution	Good
Carbon Film	Good
Loading	3%

Comments:

Analyzed By: M. Stewart

Reviewed By:

IATL International Asbestos Testing Laboratories

TEM Air Sample Worksheet

Client Name:	Vertex	**Analysis Date:** 07/24/18	**IATL Sample #:** 6565102
Client Project #:	51203		**Client Sample #:** CES-0723-04
Sample Type:	AHERA		IATL Grid Box #: 1112
QC Submittal			Grid Archive ID #: S6S8

Electron Microscope ID:	Filter Dia. (mm): 25	Magnification:	20,000X
	Effective Area (mm): 385		
III JEOL. JEM-1230, EM18440033	Filter Type: MCE	Accelerating Voltage:	100KeV
EVEX	Filter Pore Size (µm): 0.45		

Grid Opening:	0.115 mm	Volume of Air Sampled:	1805 Liters
Grid opening Area:	0.013 mm^2		
Grid Openings Read/Required:	4 4	Analytical Sensitivity:	19.2 mm^2
Total Area Analyzed:	0.0520 mm^2	Minimum Detection Limit:	0.0041 s/cc

Total Asbestos Structures:	NSD	Non-Asbestos Structures:	NSD
0.5µm - 5.0µm:	NSD		
>5.0µm:			
Asbestos:	< 19.2 s/mm^2	Non-Asbestos:	< 19.2 s/mm^2
Asbestos:	< 0.0041 s/cc	Non-Asbestos:	< 0.0041 s/cc

Analysis Data:

Grid Opening ID	Structure Number	Structure Type F/B/C/M	[1] Length 0.5 -5.0 µm	[2] Length > 5.0 µm	* Chrysotile	**Amphibole	***Non-Asbestos	Micrograph / EDS ID
S6 E4		NSD						
D5		NSD						
S8 E4		NSD						
F5		NSD						
Total:	NSD	NSD	0	0	0	0	0	

* Must confirm by Morphology, SAED, and EDXA for each suspect asbestos fiber
Record visible prominent Chrysotile DP reflections (002 ,004, 110, 130, 220, 200)

** Define Amphibole (DP obtained Y/N). Print-out EDS and attach.

*** Characterize by EDS

1, 2 Record Structure Length & Width (µm)

Prep Quality:	
Dissolution	Good
Carbon Film	Good
Loading	3%

SEE REVERSE: FIBER ORIENTATION MAP

Comments:

Analyzed By: M. Stewart

Reviewed By:

IATL International Asbestos Testing Laboratories

TEM Air Sample Worksheet

Client Name:	Vertex	**Analysis Date:** 07/24/18	**IATL Sample #:** 6565103
Client Project #:	51203		**Client Sample #:** CES-0723-05
Sample Type:	AHERA		IATL Grid Box #: 1112
QC Submittal			Grid Archive ID #: S10

Electron Microscope ID:	Filter Dia. (mm): 25		Magnification: 20,000X
	Effective Area (mm): 385		
III JEOL, JEM-1230, EM18440033	Filter Type: MCE		Accelerating Voltage: 100KeV
EVEX	Filter Pore Size (µm): 0.45		

Grid Opening:	0.115 mm	Volume of Air Sampled:	1805 Liters
Grid opening Area:	0.013 mm^2		
Grid Openings Read/Required:	4 4	Analytical Sensitivity:	19.2 mm^2
Total Area Analyzed:	0.0520 mm^2	Minimum Detection Limit:	0.0041 s/cc

Total **Asbestos** Structures:	NSD	Non-Asbestos Structures:	NSD
0.5µm - 5.0µm:	NSD		
>5.0µm:			
Asbestos:	< 19.2 s/mm^2	Non-Asbestos:	< 19.2 s/mm^2
Asbestos:	< 0.0041 s/cc	Non-Asbestos:	< 0.0041 s/cc

Analysis Data:

Grid Opening ID	Structure Number	Structure Type F/B/C/M	[1] Length 0.5 -5.0 µm	[2] Length > 5.0 µm	* Chrysotile	**Amphibole	***Non-Asbestos	Micrograph / EDS ID
S10 E4		NSD						
D5		NSD						
C6		NSD						
B7		NSD						
Total:	NSD	NSD	0	0	0	0	0	

* Must confirm by Morphology, SAED, and EDXA for each suspect asbestos fiber
Record visible prominent Chrysotile DP reflections (002 ,004, 110, 130, 220, 200)
** Define Amphibole (DP obtained Y/N). Print-out EDS and attach.
*** Characterize by EDS
1, 2 Record Structure Length & Width (µm)

Prep Quality:	
Dissolution	Good
Carbon Film	Good
Loading	3%

SEE REVERSE: FIBER ORIENTATION MAP

Comments: GRID T1 BENT.

Analyzed By: M. Stewart

Reviewed By:

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

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

Client: VER100

Report Date: 7/24/2018
Report No.: 568915 - TEM AHERA
Project: PSD; Cassidy Elementary School; 6523 Lansdowne Ave, Phila. PA
Project No.: 51203

TEM AIR SAMPLE ANALYSIS SUMMARY

Lab No.: 6565099 **Client No.:** CES-072301	**Volume:** 1805.0 L **Location:** 1WA-Room 302 **Date Sampled:** 7/23/18	**Density (s/mm²):** <19.2 **Concentration (s/cc):** <0.0041 **Asbestos Type(s):** None Detected
Lab No.: 6565100 **Client No.:** CES-072302	**Volume:** 1805.0 L **Location:** 1WA-Room 302 **Date Sampled:** 7/23/18	**Density (s/mm²):** <19.2 **Concentration (s/cc):** <0.0041 **Asbestos Type(s):** None Detected
Lab No.: 6565101 **Client No.:** CES-072303	**Volume:** 1805.0 L **Location:** 1WA-Room 302 **Date Sampled:** 7/23/18	**Density (s/mm²):** <19.2 **Concentration (s/cc):** <0.0041 **Asbestos Type(s):** None Detected
Lab No.: 6565102 **Client No.:** CES-072304	**Volume:** 1805.0 L **Location:** 1WA-Room 302 Closet **Date Sampled:** 7/23/18	**Density (s/mm²):** <19.2 **Concentration (s/cc):** <0.0041 **Asbestos Type(s):** None Detected
Lab No.: 6565103 **Client No.:** CES-072305	**Volume:** 1805.0 L **Location:** 1WA-Room 302 Closet **Date Sampled:** 7/23/18	**Density (s/mm²):** <19.2 **Concentration (s/cc):** <0.0041 **Asbestos Type(s):** None Detected

Geometric Mean = 0.0041 Structures/cc

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

Date Received: 7/23/2018
Date Analyzed: 07/24/2018
Signature:
Analyst: Mark Stewart

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

Dated : 7/24/2018 11:20:08

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client:	The Vertex Companies, Inc. 700 Turner Way, Suite 105 ASTON PA 19014	Report Date:	7/24/2018
		Report No.:	568915 - TEM AHERA
		Project:	PSD; Cassidy Elementary School; 6523 Lansdowne Ave, Phila. PA
Client:	VER100	Project No.:	51203

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.

This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA LAP LLC, or any agency of local, state or province governments nor of any agency of the U.S. government.

This report shall not be reproduced except in full, without written approval of the laboratory.

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.

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

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Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

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

Client: VER100

Report Date: 7/24/2018
Report No.: 568915 - TEM AHERA
Project: PSD; Cassidy Elementary School; 6523 Lansdowne Ave, Phila. PA
Project No.: 51203

TEM AIR SAMPLE ANALYSIS DETAILS

Lab No.: 6565099
Client No.: CES-072301

Volume (L): 1805.0 L
Date Sampled: 7/23/18
Location: IWA-Room 302

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

Micrograph Number:
EDXA Spectrum ID:

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

Lab No.: 6565100
Client No.: CES-072302

Volume (L): 1805.0 L
Date Sampled: 7/23/18
Location: IWA-Room 302

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

Micrograph Number:
EDXA Spectrum ID:

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

Lab No.: 6565101
Client No.: CES-072303

Volume (L): 1805.0 L
Date Sampled: 7/23/18
Location: IWA-Room 302

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

Micrograph Number:
EDXA Spectrum ID:

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

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

Date Received: 7/23/2018
Date Analyzed: 07/24/2018
Signature:
Analyst: Mark Stewart

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

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

Client: VER100

Report Date: 7/24/2018
Report No.: 568915 - TEM AHERA
Project: PSD; Cassidy Elementary School; 6523 Lansdowne Ave, Phila. PA
Project No.: 51203

TEM AIR SAMPLE ANALYSIS DETAILS

Lab No.: 6565102
Client No.: CES-072304

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

Micrograph Number:
EDXA Spectrum ID:

Volume (L): 1805.0 L
Date Sampled: 7/23/18
Location: IWA-Room 302 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

Lab No.: 6565103
Client No.: CES-072305

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

Micrograph Number:
EDXA Spectrum ID:

Volume (L): 1805.0 L
Date Sampled: 7/23/18
Location: IWA-Room 302 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

Geometric Mean = 0.0041 Structures/cc

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

Date Received: 7/23/2018
Date Analyzed: 07/24/2018
Signature:
Analyst: Mark Stewart

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

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ASBESTOS TESTING LABORATORIES

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Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
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CERTIFICATE OF ANALYSIS

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

Client: VER100

Report Date: 7/24/2018
Report No.: 568915 - TEM AHERA
Project: PSD; Cassidy Elementary School; 6523 Lansdowne Ave, Phila. PA
Project No.: 51203