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May 18, 2016

Mr. Thomas Geary
Director of Facilities
Haverhill Public Schools
4 Summer Street
Haverhill, MA 01832

VIA EMAIL

Project 01288.003

RE: AHERA 3-Year Re-inspection, John C. Tilton Elementary School, 70 Grove Street, Haverhill, MA

Dear Mr. Geary,

Axiom Partners, Inc. (AXIOM) conducted a 3-year AHERA¹ re-inspection of the John C. Tilton Elementary School at the above-referenced address. The re-inspection was performed to continue the Local Education Agency's (LEA's) compliance with AHERA which requires periodic assessment of known asbestos-containing building materials (ACBMs) located in this school building.

A. AHERA 3-YEAR RE-INSPECTION

The re-inspection was performed in compliance with the Environmental Protection Agency's Asbestos Hazard Emergency Response Act (AHERA), 40 CFR Part 763, Section 763.85.

The re-inspection was performed on February 23, 2016 by experienced Massachusetts-licensed Asbestos Inspectors, Ms. Heather R. Forgione and Mr. Stephen E. Minassian (License Numbers AI000177 and AI033605, respectively). The re-inspection included all accessible interior areas of the building.

A summary table prepared for the school is attached to this letter. The table includes:

- ACBMs
- Presumed ACBMs
- Quantities
- Locations
- Friability
- Hazard/Condition Assessments
- Changes in Condition
- Previous Response Actions
- Recommended Response Actions
- Newly-identified Suspect ACBMs

To ensure compliance with AHERA, a copy of this re-inspection report must be included in the Asbestos Management Plan for the school.

AXIOM recommends labeling of certain ACBMs specified by AHERA and the continued management of these ACBMs in place until they are removed.

¹ EPA's Asbestos Hazard Emergency Response Act, 1986



B. RECOMMENDATIONS/ACTION ITEMS

Based on AXIOM's observations during this 3-year AHERA re-inspection, we recommend the following:

- Pipe insulation in the sub-basement is in very poor condition. Pipe insulation lengths are hanging from pipes in some areas, and insulation debris was observed in multiple locations on the dirt floor. Access to the sub-basement should be restricted until abatement of the pipe insulation and debris can be completed. Removal of pipe insulation and fittings in the sub-basement should be a high-priority response action.
- Label the sub-basement with asbestos warning stickers/labels (adhere directly onto insulation if feasible and post a warning sign at the entrance).

C. LIMITATIONS AND EXCLUSIONS

This inspection effort included our review of available AHERA documentation. The original 1988 Management Plan and the most recent 3-year inspection report were used as guidance documents. Historical documentation did not typically include supporting asbestos bulk sample data (laboratory analytical reports). AXIOM did not collect any bulk samples for asbestos analysis.

The re-inspection was performed by AXIOM to ensure that the LEA is in compliance with AHERA; however this inspection is not NESHAP² compliant, which is required for building demolition or renovation including testing of exterior suspect ACBMs. The potential for concealed ACBMs to remain in this school exists. Inaccessible building areas, systems, structural components or surfaces which may not have been observed may include the following:

- Buried or otherwise concealed pipe trenches and utility vaults/corridors;
- Buried foundations (except as specifically identified);
- Electrical equipment/wire (except as specifically identified);
- Multi-layered flooring material applications;
- Most pipe and vessel gaskets;
- Inside boilers and other mechanical equipment, ductwork and air handling equipment;
- Enclosed wall and ceiling cavities;
- Fire door cores;
- Interior window and door caulking that have been replaced or in-filled;
- Roofing materials; and
- Exterior window and door caulking.

Please note that, while roofing materials, window and door caulking and other exterior materials are not regulated by AHERA, these materials would require sampling prior to demolition, renovations or repairs that may impact them.

AXIOM made every reasonable effort to address these potential ACBMs at the school; however, the potential remains that concealed ACBMs could be encountered during future building renovations. If suspect ACBMs are encountered that are not discussed herein, testing should be performed and results should be incorporated into the School's Asbestos Management Plan.

² EPA's National Emission Standard for Hazardous Air Pollutants

Mr. Thomas Geary
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AHERA 3-Year Re-inspection Report
John C. Tilton Elementary School
Haverhill, Massachusetts

Please call us if you have any questions.

Sincerely,



Heather R. Forgione
Project Manager/Asbestos Inspector



Stephen E. Minassian
Principal

attachments: AHERA Summary Table

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AHERA SUMMARY TABLE

LEA/School System: Haverhill Public Schools

Building: John C. Tilton Elementary School

Inspection Date: February 23, 2016

Re-inspection Findings for ACBMs							Management Planner Recommendations		
Material Description	Location(s)	Quantity ¹	Friability	Assessment Category ²	Assessment Justification	Change in Assessment	Preventive Measures; Response Actions	Schedule	
								Begin	Complete
Wall Plaster (Skim and Base Coats)	Throughout Building	TBD	Non-Friable	5	PACM; mostly intact, some areas of minor damage	---	Identified in 2011 Hub inspection and confirmed in this inspection; 2011 Hub inspection reported material is negative, but there are no sample results to confirm; repair minor damage and maintain O&M Plan		
Gypsum Wall Board	Partition Walls Throughout Building	TBD	Non-Friable	5	PACM; intact	---	Identified in 2011 Hub inspection and confirmed in this inspection; 2011 Hub inspection reported material is negative, but there are no sample results to confirm; maintain O&M Plan		
Joint Compound	Partition Walls Throughout Building	TBD	Non-Friable	5	PACM; intact	---	Not identified in the 2011 Hub inspection; maintain O&M Plan		
Hardwood Flooring Paper	Throughout Building	~58,000 SF	Non-Friable	7	PACM; intact	---	Identified in 2011 Hub inspection and confirmed in this inspection; 2011 Hub inspection reported material is negative, but there are no sample results to confirm;		

¹ SF = Square Feet; LF = Linear Feet; EA = Each

² AHERA Categories: (1) Damaged or significantly damaged thermal system insulation ACM; (2) Damaged friable surfacing ACM; (3) Significantly damaged friable surfacing ACM; (4) Damaged or significantly damaged friable miscellaneous ACM; (5) ACBM with potential for damage; (6) ACBM with potential for significant damage; (7) Any remaining friable ACBM or friable suspected ACBM

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Inspection Date: February 23, 2016

Re-inspection Findings for ACBMs							Management Planner Recommendations		
Material Description	Location(s)	Quantity ¹	Friability	Assessment Category ²	Assessment Justification	Change in Assessment	Preventive Measures; Response Actions	Schedule	
								Begin	Complete
							maintain O&M Plan		
Glazing Compound on Reinforced Glass	Interior Doors and Windows	20 EA (Doors) 21 EA (Windows)	Non-Friable	5	ACBM (sampled by Hub); intact	No change	Identified in 2011 Hub inspection and confirmed in this inspection; maintain O&M Plan		
Chalk Board	Classrooms Throughout Building, Front Office, Library, Nurse	~200 Boards	Non-Friable	5	PACM; intact	---	Not identified in the 2011 Hub inspection; maintain O&M Plan		
Chalk Board Adhesive	Classrooms Throughout Building, Front Office, Library, Nurse	~200 Boards	Non-Friable	5	PACM; intact	---	Not identified in the 2011 Hub inspection; maintain O&M Plan		
2' x 4' Ceiling Tile – Dots and Fissures	Front Office, Basement Custodian	~300 SF	Friable	5	PACM; intact	No change	Identified in 2011 Hub inspection and confirmed in this inspection; maintain O&M Plan		
4" Black Cove Base	Front Office, Basement Custodian	~110 LF	Non-Friable	5	PACM; intact	---	Not identified in the 2011 Hub inspection; maintain O&M Plan		
4" Black Cove Base Adhesive	Front Office, Basement Custodian	~110 LF	Non-Friable	5	PACM; intact	---	Not identified in the 2011 Hub inspection; maintain O&M Plan		
Wood Wall Panel Adhesive	Library, Rms 207, 208, 215, 216, Buccini	~300 SF	Non-Friable	5	PACM; intact	---	Not identified in the 2011 Hub inspection; maintain O&M Plan		
Ceiling and Wall Panels and Trim	Ceilings – Rms 002, 003, 004, 104, 105, 106; Wall –	13,650 SF	Non-Friable	5	PACM; intact	---	Not identified in the 2011 Hub inspection; maintain O&M Plan		

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Inspection Date: February 23, 2016

Re-inspection Findings for ACBMs							Management Planner Recommendations		
Material Description	Location(s)	Quantity ¹	Friability	Assessment Category ²	Assessment Justification	Change in Assessment	Preventive Measures; Response Actions	Begin	Complete
	Basement Hall								
Pipe Insulation	Sub-Basement	400 LF + 400 SF debris	Friable	1	ACBM (sampled by Hub); fair to poor condition and significant debris on dirt floor of sub-basement	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove intact insulation and debris from entire sub-basement	06/2016	09/2016
Pipe Insulation	Basement Girl's Room	60 LF	Friable	1	ACBM (sampled by Hub); good to fair condition	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove or repair and maintain O&M Plan		
Pipe Insulation	Basement Boy's Room	30 LF	Friable	1	ACBM (sampled by Hub); good to fair condition	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove or repair and maintain O&M Plan		
Pipe Insulation	Basement Speech & Language	68 LF	Friable	1	ACBM (sampled by Hub); good to fair condition	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove or repair and maintain O&M Plan		
Pipe Insulation	Basement Restroom	130 LF	Friable	1	ACBM (sampled by Hub); good to fair condition	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove or repair and maintain O&M Plan		

AHERA SUMMARY TABLE

LEA/School System: Haverhill Public Schools

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Inspection Date: February 23, 2016

Re-inspection Findings for ACBMs							Management Planner Recommendations		
Material Description	Location(s)	Quantity ¹	Friability	Assessment Category ²	Assessment Justification	Change in Assessment	Preventive Measures; Response Actions	Schedule	
								Begin	Complete
Pipe Insulation	Basement Custodial Closet	40 LF	Friable	1	ACBM (sampled by Hub); good to fair condition	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove or repair and maintain O&M Plan		
Pipe Insulation	Basement Custodial Closet/ Men's Room	35 LF	Friable	1	ACBM (sampled by Hub); good to fair condition	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove or repair and maintain O&M Plan		
Pipe Insulation	Basement Hall	600 LF	Friable	1	ACBM (sampled by Hub); good to fair condition	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove or repair and maintain O&M Plan		
Pipe Insulation	Basement Computer Room	110 LF	Friable	1	ACBM (sampled by Hub); good to fair condition	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove or repair and maintain O&M Plan		
Pipe Insulation	Basement Stairs	5 LF	Friable	1	ACBM (sampled by Hub); good to fair condition	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove or repair and maintain O&M Plan		
Pipe Insulation	Employee Room Behind Kitchen	30 LF	Friable	1	ACBM (sampled by Hub); good to fair condition	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove or repair and maintain		

AHERA SUMMARY TABLE

LEA/School System: Haverhill Public Schools

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Inspection Date: February 23, 2016

Re-inspection Findings for ACBMs							Management Planner Recommendations		
Material Description	Location(s)	Quantity ¹	Friability	Assessment Category ²	Assessment Justification	Change in Assessment	Preventive Measures; Response Actions	Begin	Complete
							O&M Plan		
Pipe Insulation	Basement Data Room	15 LF	Friable	1	ACBM (sampled by Hub); good to fair condition	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove or repair and maintain O&M Plan		
Pipe Insulation	Basement OT Room	180 LF	Friable	1	ACBM (sampled by Hub); good to fair condition	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove or repair and maintain O&M Plan		
Pipe Fittings	Sub-Basement	~30 EA	Friable	1	PACM; fair to poor condition and significant debris on dirt floor of sub-basement	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove intact insulation and debris from entire sub-basement	06/2016	09/2016
Pipe Fittings	Basement Girl's Room	~10 EA	Friable	1	PACM; good to fair condition	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove or repair and maintain O&M Plan		
Pipe Fittings	Basement Boy's Room	~17 EA	Friable	1	PACM; good to fair condition	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove or repair and maintain O&M Plan		
Pipe Fittings	Basement Speech &	~10 EA	Friable	1	PACM; good to fair	No change	Identified in 2011 Hub inspection and		

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Inspection Date: February 23, 2016

Re-inspection Findings for ACBMs							Management Planner Recommendations		
Material Description	Location(s)	Quantity ¹	Friability	Assessment Category ²	Assessment Justification	Change in Assessment	Preventive Measures; Response Actions	Begin	Complete
	Language				condition		confirmed in this inspection; remove or repair and maintain O&M Plan		
Pipe Fittings	Basement Restroom	6 EA	Friable	1	PACM; good to fair condition	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove or repair and maintain O&M Plan		
Pipe Fittings	Basement Custodial Closet	7 EA	Friable	1	PACM; good to fair condition	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove or repair and maintain O&M Plan		
Pipe Fittings	Basement Custodial Closet/ Men's Room	8 EA	Friable	1	PACM; good to fair condition	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove or repair and maintain O&M Plan		
Pipe Fittings	Basement Hall	~50 EA	Friable	1	PACM; good to fair condition	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove or repair and maintain O&M Plan		
Pipe Fittings	Basement Computer Room	22 EA	Friable	1	ACBM (sampled by Hub); good to fair condition	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove or repair and maintain O&M Plan		

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Re-inspection Findings for ACBMs							Management Planner Recommendations		
Material Description	Location(s)	Quantity ¹	Friability	Assessment Category ²	Assessment Justification	Change in Assessment	Preventive Measures; Response Actions	Schedule	
								Begin	Complete
Pipe Fittings	Employee Room Behind Kitchen	7 EA	Friable	1	ACBM (sampled by Hub); good to fair condition	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove or repair and maintain O&M Plan		
Pipe Insulation	Basement Data Room	1 EA	Friable	1	ACBM (sampled by Hub); good to fair condition	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove or repair and maintain O&M Plan		
9" x 9" Brown with Black & White Streaks Floor Tile	Basement Teacher's Room and Restroom	700 SF	Non-Friable	5	ACBM (sampled by Hub); damaged	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove or repair and maintain O&M Plan		
9" x 9" Brown with Black & White Streaks Floor Tile Adhesive	Basement Teacher's Room and Restroom	700 SF	Non-Friable	5	PACM; intact	No change	Identified in 2011 Hub inspection and confirmed in this inspection; remove or repair and maintain O&M Plan		
Brick Mortar	Attic and Basement	TBD	Non-Friable	5	PACM; intact	No change	Identified in 2011 Hub inspection and confirmed in this inspection; maintain O&M Plan		
Terrazzo	Hall by Rms 109, 114, 209, 214, Basement Room Beneath Rm	~4,000 SF	Non-Friable	5	PACM; intact	No change	Identified in 2011 Hub inspection and confirmed in this inspection; maintain O&M Plan		

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Re-inspection Findings for ACBMs							Management Planner Recommendations		
Material Description	Location(s)	Quantity ¹	Friability	Assessment Category ²	Assessment Justification	Change in Assessment	Preventive Measures; Response Actions	Schedule	
								Begin	Complete
	106, Asst. Principal's Office								
Boiler Breeching Insulation and Wrap	Basement Boiler Room	1 Boiler	Friable	1	PACM; intact with some minor damage	---	Not identified in the 2011 Hub inspection; replace or repair and maintain O&M Plan		
Boiler Rope Gasket	Basement Boiler Room	2 Boilers	Friable	1	PACM; damaged, fair condition	---	Not identified in the 2011 Hub inspection; replace or repair and maintain O&M Plan		
Boiler Burner Gasket	Basement Boiler Room	2 Boilers	Friable	5	PACM; intact	---	Not identified in the 2011 Hub inspection; maintain O&M Plan		
Heat Exchanger/ Plenum Stick Pin Adhesive	Basement Boiler Room	1 Exchanger	Non-Friable	5	PACM; intact	---	Not identified in the 2011 Hub inspection; maintain O&M Plan		
Hot Water Tank	Basement Boiler Room	1 Tank	Friable	1	ACM (sampled by Hub); identified in 2011 Hub inspection as damaged	---	Identified in 2011 Hub inspection but not confirmed in this inspection; replace or repair and maintain O&M Plan		
9" x 9" Brown with Beige and Red Streaks Floor Tile	Art Room	715 SF	Non-Friable	5	PACM; identified in 2011 Hub inspection as damaged	---	Identified in 2011 Hub inspection but not confirmed in this inspection; replace or repair and maintain O&M Plan		
9" x 9" Brown with Beige and Red Streaks	Art Room	715 SF	Non-Friable	5	PACM; identified in 2011 Hub	---	Identified in 2011 Hub inspection but not confirmed in this		

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Material Description	Location(s)	Quantity ¹	Friability	Assessment Category ²	Assessment Justification	Change in Assessment	Preventive Measures; Response Actions	Begin	Complete
Floor Tile Adhesive					inspection as damaged		inspection; replace or repair and maintain O&M Plan		
Bulletin Board	Basement Hall at Computer Room	4 Boards	Non-Friable	5	PACM; some minor damage	---	Not identified in the 2011 Hub inspection; repair or replace and maintain O&M Plan		
Bulletin Board Adhesive	Basement Hall at Computer Room	4 Boards	Non-Friable	5	PACM; intact	---	Not identified in the 2011 Hub inspection; maintain O&M Plan		
Bulletin Board	Rms 003 and 105	Unknown	Non-Friable	5	PACM	---	Discussed in 2011 Hub inspection but not confirmed either in 2011 or in this inspection; maintain O&M Plan		
Bulletin Board Adhesive	Rms 003 and 105	Unknown	Non-Friable	5	PACM	---	Discussed in 2011 Hub inspection but not confirmed either in 2011 or in this inspection; maintain O&M Plan		
Ceramic Tile Grout	Hallways	Unknown	Non-Friable	5	PACM; identified in 2011 Hub inspection as intact	---	Identified in 2011 Hub inspection but not confirmed in this inspection; maintain O&M Plan		
Ceramic Tile Thinset/ Adhesive	Hallways	Unknown	Non-Friable	5	PACM; identified in 2011 Hub inspection as intact	---	Identified in 2011 Hub inspection but not confirmed in this inspection; maintain O&M Plan		
Carpet Adhesive	Room 107	Unknown	Non-Friable	5	PACM; identified in	---	Identified in 2011 Hub inspection but not		

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Material Description	Location(s)	Quantity ¹	Friability	Assessment Category ²	Assessment Justification	Change in Assessment	Preventive Measures; Response Actions	Schedule	
								Begin	Complete
					2011 Hub inspection as intact		confirmed in this inspection; maintain O&M Plan		
12" x 12" Floor Tile	Kitchen	Unknown	Non-Friable	5	PACM; identified in 2011 Hub inspection as intact	---	Identified in 2011 Hub inspection but not confirmed in this inspection; maintain O&M Plan		
12" x 12" Floor Tile Adhesive	Kitchen	Unknown	Non-Friable	5	PACM; identified in 2011 Hub inspection as intact	---	Identified in 2011 Hub inspection but not confirmed in this inspection; maintain O&M Plan		
12" x 12" Teal Floor Tile	Basement Restroom and Teacher's Lounge	36 SF (Patch) 15 SF (Patch)	Non-Friable	5	PACM; damaged	No change	Identified in 2011 Hub inspection and confirmed in this inspection; replace or repair and maintain O&M Plan		
12" x 12" Teal Floor Tile Adhesive	Basement Restroom and Teacher's Lounge	36 SF (Patch) 15 SF (Patch)	Non-Friable	5	PACM; damaged	No change	Identified in 2011 Hub inspection and confirmed in this inspection; replace or repair and maintain O&M Plan		
Ceiling Texture	Basement Cafeteria	~4,500 SF	Non-Friable	5	PACM; some minor damage	---	Not identified in the 2011 Hub inspection; replace or repair and maintain O&M Plan		
Pipe Thread Sealant	Throughout Building	TBD	Non-Friable	5	PACM; intact	---	Not identified in the 2011 Hub inspection; maintain O&M Plan		

AHERA SUMMARY TABLE

LEA/School System: Haverhill Public Schools **Building:** John C. Tilton Elementary School **Inspection Date:** February 23, 2016

General Comments:

- Concealed pipe/fitting insulation may be located in wall cavities.
- AXIOM does not consider terrazzo or brick mortar to be suspect ACBMs. These materials remain on the table because they were previously identified by HUB.

Suggested Action Items

- Pipe insulation in the sub-basement is in very poor condition. Pipe insulation lengths are hanging from pipes in some areas, and insulation debris was observed in multiple locations on the dirt floor. Access to the sub-basement should be restricted until abatement of the pipe insulation and debris can be completed. Removal of pipe insulation and fittings in the sub-basement should be a high-priority response action.
- Label the sub-basement with asbestos warning stickers/labels (adhere directly onto insulation if feasible and post a warning sign at the entrance).

Were additional samples of this ACBM collected: NO	Date Management Planner Review: May 18, 2016
Inspector Name: Heather R. Forgione	Management Planner Name: Heather R. Forgione
Inspector Signature: <i>Heather R. Forgione</i>	Management Planner Signature: <i>Heather R. Forgione</i>
Accreditation No. / State: AI000177 / Massachusetts	Accreditation No. / State: AP900433 / Massachusetts
Expiration Date: September 9, 2016	Expiration Date: September 9, 2016

I, the LEA's Designated Person have read and understood the recommendations made above: Thomas Geary	Signature (LEA Designate):
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