

**FINAL REPORT
FOR
LOWELL HIGH SCHOOL EXISTING CONDITIONS EVALUATION
HAZARDOUS MATERIALS IDENTIFICATION
STUDY
PERKINS EASTMAN PROJECT # 67150**

PROJECT NO: 217 109.00

Survey Dates:
September 19 – October 12, 2016
March-April 2017

CONDUCTED BY:

**UNIVERSAL ENVIRONMENTAL CONSULTANTS
12 Brewster Road
Framingham, MA 01702**

April 10, 2017

Ms. Alicia Caritano, Senior Associate
Perkins Eastman
20 Ashburton Place, Floor 8
Boston, MA 02108

Reference: Report for Hazardous Materials Identification Study
Lowell High School, Lowell, MA - PE# 67150

Dear Ms. Caritano:

Thank you for the opportunity for Universal Environmental Consultants (UEC) to provide professional services.

Enclosed please find the report for the hazardous materials identification study at the Lowell High School, Lowell, MA.

Please do not hesitate to call should you have any questions.

Very truly yours,

Universal Environmental Consultants



Ammar M. Dieb
President

UEC:\217 109.00\Report.DOC

Enclosure

1.0 INTRODUCTION:

Universal Environmental Consultants (UEC) has been providing comprehensive asbestos services since 2001 and has completed projects throughout New England. We have completed projects for a variety of clients including commercial, industrial, municipal, and public and private schools. We maintain appropriate asbestos licenses and staff with a minimum of twenty-five years of experience.

UEC was contracted by Perkins Eastman to conduct the following services at the Lowell High School, Lowell, MA:

- Asbestos Containing Materials (ACM) determination inspection and sampling;
- Polychlorinated Biphenyls (PCB's)-Electrical Equipment and Light Fixtures inspection;
- PCB's Caulking Inspection;
- Lead Based Paint (LBP) inspection;
- Mercury in Rubber Flooring inspection and sampling;
- Airborne Mold inspection and sampling;
- Radon sampling;

The high school consists of several buildings/wings as follows:

- "1922 Building" (original 1892 Coburn/1922 Sullivan Building /1997 Kouloheras Addition)
- Lord Building /Field House;
- Freshman Academy;
- Steam Plant.

The scope of work included the inspection of accessible ACM, collection of bulk samples from materials suspected to contain asbestos, determination and quantities of types of ACM found and cost estimates for remediation. A comprehensive survey per the Environmental Protection Agency (EPA) NESHAP regulation would be required prior to any renovation or demolition activities.

Selective destructive investigation was performed on the interior and exterior of the school. Interior investigation was performed at the 1922 Building and Freshman Academy. Exterior investigation was performed at the 1922 Building.

Bulk samples analyses for asbestos were performed using the standard Polarized Light Microscopy (PLM) Method in accordance with EPA standard. Bulk samples were collected by Massachusetts licensed asbestos inspectors Mr. Leonard J. Busa (AI-030673) and Mr. Jason Becotte (AI-034963) and analyzed by Massachusetts licensed laboratories Asbestos Identification Laboratory and EMSL, Woburn, MA.

Mercury in rubber flooring sample was analyzed by an EPA approved laboratory EMSL, Cinnaminson, NJ.

Airborne mold samples were analyzed by an EPA approved laboratory EMSL, Woburn, MA.

Radon samples were analyzed by an EPA licensed laboratory AccuStar, Medway, MA.

Samples results are attached.

2.0 FINDINGS:

Asbestos Containing Materials (ACM):

The regulations for asbestos inspection are based on representative sampling. It would be impractical and costly to sample all materials in all areas. Therefore, representative samples of each homogenous area were collected and analyzed or assumed.

All suspect materials were grouped into homogenous areas. By definition, a homogenous area is one in which the materials are evenly mixed and similar in appearance and texture throughout. A homogeneous area shall be determined to contain asbestos based on findings that the results of at least one sample collected from that area shows that asbestos is present in an amount greater than 1 percent in accordance with EPA regulations. Per the Department of Environmental Protection (DEP) any amount of asbestos found must be disposed as asbestos. No additional suspect and accessible ACM were found during this survey. However, hidden ACM may be found during the renovation and demolition activities.

Number of Samples Collected:

1922 Building

September 19 – October 12, 2016

Ninety-eight (98) bulk samples were collected from materials suspected of containing asbestos, including:

Type and Location of Suspect Material

1. Bedding/adhesive for ceramic floor at basement custodian room
2. Cementitious painted floor at basement main corridor
3. Lab table at classroom 314
4. Adhesive for tectum wall panel at basement heating room 23
5. Adhesive for tectum wall panel at basement heating room 23
6. White fire block above ceiling at basement heating room 23
7. Grey duct sealant at teacher's center attic
8. Lime/grey duct sealant at attic
9. Insulation inside wood fire door type I at basement stairwell
10. Insulation inside wood fire door type II at second floor auditorium lobby
11. White brick mortar at teacher's center attic
12. Fireproofing at auditorium lobby
13. Fireproofing at auditorium lobby
14. Hard tan glazing caulking for vision lite in wood door at classroom 133
15. Soft black glazing caulking for borrowed lite at second floor
16. Hard grey glazing caulking for borrowed lite at second floor
17. Hard grey glazing caulking for borrowed lite at second floor
18. Soft black glazing caulking for borrowed lite at first floor
19. 2' x 2' Suspended acoustical ceiling tile at band storage room
20. 2' x 2' Suspended acoustical ceiling tile at auditorium lobby
21. 2' x 2' Suspended acoustical ceiling tile at teacher's center
22. Blue/dark grey spot linoleum floor covering at classroom 017
23. Grey spot linoleum floor covering at bridge I
24. Light grey spot linoleum floor covering at bridge II (new bridge)
25. Adhesive for grey spot linoleum floor covering at bridge I
26. Joint compound at classroom 12
27. Joint compound at heating room 23
28. Ceiling joint compound at basement custodian area
29. Joint compound at first floor by room 139
30. Joint compound at basement small mechanical room
31. Joint compound at teacher's center hall
32. Joint compound at hallway outside lockers by room 136
33. Joint compound at custodian closet by room 223
34. Joint compound behind ceramic wall tile at second floor elevator
35. Grey/brown grey/white vinyl floor tile at upper level above teacher's center
36. Adhesive for grey/brown grey/white vinyl floor tile at upper level above teacher's center
37. Grey/brown grey/white vinyl floor tile at upper level above teacher's center

38. Adhesive for grey/brown grey/white vinyl floor tile at upper level above teacher's center
39. Dark blue vinyl floor tile at classroom 105 closet
40. Adhesive for dark blue vinyl floor tile at classroom 105 closet
41. Dark blue vinyl floor tile at teacher's center kitchen
42. Adhesive for dark blue vinyl floor tile at teacher's center kitchen
43. Dark blue vinyl floor tile at classroom 28
44. Light blue vinyl floor tile at ROTC storage room
45. Caramel vinyl floor tile at third floor plant room top of stairwell I
46. Adhesive for caramel vinyl floor tile at third floor plant room top of stairwell I
47. White/black grey vinyl floor tile at end of bridge
48. White/blue spots vinyl floor tile at hallway outside teacher's center
49. Mastic for white/blue spots vinyl floor tile at hallway outside teacher's center
50. Sea green vinyl floor tile at hallway outside teacher's center
51. Mastic for sea green vinyl floor tile at hallway outside teacher's center
52. White/blue spots vinyl floor tile at classroom 314
53. White/blue spots vinyl floor tile at basement ROTC hall
54. Mastic for white/blue spots vinyl floor tile at basement ROTC hall
55. Mastic for white/blue spots vinyl floor tile at basement ROTC hall
56. Light grey/white vinyl floor tile at basement stairwell
57. Mastic for light grey/white vinyl floor tile at basement stairwell
58. Vinyl floor tile under plywood/carpet at classroom 117
59. Mastic for vinyl floor tile under plywood/carpet at classroom 117
60. Vinyl floor tile under plywood/carpet at storage room 126-A
61. Mastic for vinyl floor tile under plywood/carpet at storage room 126-A
62. Ceiling plaster at third floor custodian closet
63. Ceiling plaster at basement band room
64. Glue daub for ceiling plaster at basement band room
65. Wall plaster at teacher's center
66. Wall plaster at auditorium
67. Wall plaster at third floor stairwell
68. Wall plaster at classroom 105
69. Wall plaster at classroom 110
70. Wall plaster at classroom 223
71. Wall plaster at main corridor by classroom 220
72. Wall plaster at main corridor by classroom 321
73. Fireproofing at hallway by classroom 352
74. Hard tan glazing caulking for vision lite in wood door at classroom 323
75. Joint compound behind ceramic wall tile at boy's room by room 203
76. Hard black lab table at classroom 304
77. Slate chalkboard at classroom 329
78. White residue on slate chalkboard at classroom 329
79. Wall plaster at classroom 304
80. Concrete slab under hardwood floor at rear hallway of room 220-C
81. Hard tan glazing caulking for vision lite in wood door at classroom 131
82. Hard grey glazing caulking for vision lite in metal door at first floor stairwell
83. Hard grey glazing caulking for vision lite in metal door at second floor stairwell
84. Hard grey glazing caulking for vision lite in metal door at rear hallway
85. Exterior window framing caulking
86. Exterior window framing caulking
87. Exterior window framing caulking
88. Exterior window framing caulking
89. Exterior window framing caulking
90. Exterior window framing caulking
91. Exterior door framing caulking
92. Exterior residue door framing caulking on brick

93. Exterior door framing caulking
94. Exterior horizontal white caulking in sill
95. Exterior horizontal white caulking in sill
96. Blue/dark grey spot linoleum floor covering at Coburn basement stairwell
97. Adhesive for blue/dark grey spot linoleum floor covering at Coburn basement stairwell
98. Grey spot linoleum floor covering at bridge I

Sample Results:

Type and Location of Suspect Material	Sample Result
1. Bedding/adhesive for ceramic floor at basement custodian room	No Asbestos Detected
2. Cementitious painted floor at basement main corridor	No Asbestos Detected
3. Lab table at classroom 314	20% Asbestos
4. Adhesive for tectum wall panel at basement heating room 23	No Asbestos Detected
5. Adhesive for tectum wall panel at basement heating room 23	No Asbestos Detected
6. White fire block above ceiling at basement heating room 23	No Asbestos Detected
7. Grey duct sealant at teacher's center attic	No Asbestos Detected
8. Lime/grey duct sealant at attic	No Asbestos Detected
9. Insulation inside wood fire door type I at basement stairwell	No Asbestos Detected
10. Insulation inside wood fire door type II at second floor auditorium lobby	No Asbestos Detected
11. White brick mortar at teacher's center attic	No Asbestos Detected
12. Fireproofing at auditorium lobby	No Asbestos Detected
13. Fireproofing at auditorium lobby	No Asbestos Detected
14. Hard tan glazing caulking for vision lite in wood door at classroom 133	No Asbestos Detected
15. Soft black glazing caulking for borrowed lite at second floor	3% Asbestos
16. Hard grey glazing caulking for borrowed lite at second floor	2% Asbestos
17. Hard grey glazing caulking for borrowed lite at second floor	No Asbestos Detected
18. Soft black glazing caulking for borrowed lite at first floor	No Asbestos Detected
19. 2' x 2' Suspended acoustical ceiling tile at band storage room	No Asbestos Detected
20. 2' x 2' Suspended acoustical ceiling tile at auditorium lobby	No Asbestos Detected
21. 2' x 2' Suspended acoustical ceiling tile at teacher's center	No Asbestos Detected
22. Blue/dark grey spot linoleum floor covering at classroom 017	No Asbestos Detected
23. Grey spot linoleum floor covering at bridge I	No Asbestos Detected
24. Light grey spot linoleum floor covering at bridge II (new bridge)	No Asbestos Detected
25. Adhesive for grey spot linoleum floor covering at bridge I	No Asbestos Detected
26. Joint compound at classroom 12	No Asbestos Detected
27. Joint compound at heating room 23	No Asbestos Detected
28. Ceiling joint compound at basement custodian area	No Asbestos Detected
29. Joint compound at first floor by room 139	No Asbestos Detected
30. Joint compound at basement small mechanical room	No Asbestos Detected
31. Joint compound at teacher's center hall	No Asbestos Detected
32. Joint compound at hallway outside lockers by room 136	No Asbestos Detected
33. Joint compound at custodian closet by room 223	No Asbestos Detected
34. Joint compound behind ceramic wall tile at second floor elevator	No Asbestos Detected
35. Grey/brown grey/white vinyl floor tile at upper level above teacher's center	No Asbestos Detected
36. Adhesive for grey/brown grey/white vinyl floor tile at upper level above teacher's center	No Asbestos Detected
37. Grey/brown grey/white vinyl floor tile at upper level above teacher's center	No Asbestos Detected
38. Adhesive for grey/brown grey/white vinyl floor tile at upper level above teacher's center	No Asbestos Detected
39. Dark blue vinyl floor tile at classroom 105 closet	No Asbestos Detected
40. Adhesive for dark blue vinyl floor tile at classroom 105 closet	No Asbestos Detected
41. Dark blue vinyl floor tile at teacher's center kitchen	No Asbestos Detected
42. Adhesive for dark blue vinyl floor tile at teacher's center kitchen	No Asbestos Detected
43. Dark blue vinyl floor tile at classroom 28	No Asbestos Detected
44. Light blue vinyl floor tile at ROTC storage room	No Asbestos Detected

45. Caramel vinyl floor tile at third floor plant room top of stairwell I	No Asbestos Detected
46. Adhesive for caramel vinyl floor tile at third floor plant room top of stairwell I	No Asbestos Detected
47. White/black grey vinyl floor tile at end of bridge	No Asbestos Detected
48. White/blue spots vinyl floor tile at hallway outside teacher's center	No Asbestos Detected
49. Mastic for white/blue spots vinyl floor tile at hallway outside teacher's center	No Asbestos Detected
50. Sea green vinyl floor tile at hallway outside teacher's center	No Asbestos Detected
51. Mastic for sea green vinyl floor tile at hallway outside teacher's center	No Asbestos Detected
52. White/blue spots vinyl floor tile at classroom 314	No Asbestos Detected
53. White/blue spots vinyl floor tile at basement ROTC hall	No Asbestos Detected
54. Mastic for white/blue spots vinyl floor tile at basement ROTC hall	No Asbestos Detected
55. Mastic for white/blue spots vinyl floor tile at basement ROTC hall	No Asbestos Detected
56. Light grey/white vinyl floor tile at basement stairwell	2% Asbestos
57. Mastic for light grey/white vinyl floor tile at basement stairwell	No Asbestos Detected
58. Vinyl floor tile under plywood/carpet at classroom 117	No Asbestos Detected
59. Mastic for vinyl floor tile under plywood/carpet at classroom 117	5% Asbestos
60. Vinyl floor tile under plywood/carpet at storage room 126-A	No Asbestos Detected
61. Mastic for vinyl floor tile under plywood/carpet at storage room 126-A	3% Asbestos
62. Ceiling plaster at third floor custodian closet	No Asbestos Detected
63. Ceiling plaster at basement band room	No Asbestos Detected
64. Glue daub for ceiling plaster at basement band room	3% Asbestos
65. Wall plaster at teacher's center	No Asbestos Detected
66. Wall plaster at auditorium	No Asbestos Detected
67. Wall plaster at third floor stairwell	No Asbestos Detected
68. Wall plaster at classroom 105	No Asbestos Detected
69. Wall plaster at classroom 110	No Asbestos Detected
70. Wall plaster at classroom 223	No Asbestos Detected
71. Wall plaster at main corridor by classroom 220	No Asbestos Detected
72. Wall plaster at main corridor by classroom 321	No Asbestos Detected
73. Fireproofing at hallway by classroom 352	No Asbestos Detected
74. Hard tan glazing caulking for vision lite in wood door at classroom 323	No Asbestos Detected
75. Joint compound behind ceramic wall tile at boy's room by room 203	No Asbestos Detected
76. Hard black lab table at classroom 304	No Asbestos Detected
77. Slate chalkboard at classroom 329	No Asbestos Detected
78. White residue on slate chalkboard at classroom 329	No Asbestos Detected
79. Wall plaster at classroom 304	No Asbestos Detected
80. Concrete slab under hardwood floor at rear hallway of room 220-C	No Asbestos Detected
81. Hard tan glazing caulking for vision lite in wood door at classroom 131	No Asbestos Detected
82. Hard grey glazing caulking for vision lite in metal door at first floor stairwell	2% Asbestos
83. Hard grey glazing caulking for vision lite in metal door at second floor stairwell	No Asbestos Detected
84. Hard grey glazing caulking for vision lite in metal door at rear hallway	2% Asbestos
85. Exterior window framing caulking	No Asbestos Detected
86. Exterior window framing caulking	No Asbestos Detected
87. Exterior window framing caulking	No Asbestos Detected
88. Exterior window framing caulking	No Asbestos Detected
89. Exterior window framing caulking	No Asbestos Detected
90. Exterior window framing caulking	No Asbestos Detected
91. Exterior door framing caulking	2% Asbestos
92. Exterior residue door framing caulking on brick	2% Asbestos
93. Exterior door framing caulking	2% Asbestos
94. Exterior horizontal white caulking in sill	No Asbestos Detected
95. Exterior horizontal white caulking in sill	No Asbestos Detected
96. Blue/dark grey spot linoleum floor covering at Coburn basement stairwell	No Asbestos Detected
97. Adhesive for blue/dark grey spot linoleum floor covering at Coburn basement stairwell	No Asbestos Detected
98. Grey spot linoleum floor covering at bridge I	No Asbestos Detected

April 8, 2017

Two (2) bulk samples were collected from materials suspected of containing asbestos, including:

Type and Location of Suspect Material

1. Damproofing on foundation at new addition
2. Damproofing on foundation at new addition

Sample Results:

Type and Location of Suspect Material

Sample Result

- | | |
|--|----------------------|
| 1. Damproofing on foundation at new addition | No Asbestos Detected |
| 2. Damproofing on foundation at new addition | No Asbestos Detected |

Observations and Conclusions:

The condition of ACM is very important. ACM in good condition does not present a health issue unless it is disturbed. Therefore, it is not necessary to remediate ACM in good condition unless it will be disturbed through renovation, demolition or other activity.

Refer to the AHERA Management Plan for condition of ACM.

1. Lab table was found to contain asbestos.
2. Soft black glazing caulking for borrowed lite was found to contain asbestos.
3. Hard grey glazing caulking for borrowed lite was found to contain asbestos.
4. Light grey/white vinyl floor tile was found to contain asbestos.
5. Mastic for vinyl floor tile under plywood/carpet was found to contain asbestos.
6. Glue daub for ceiling plaster was found to contain asbestos.
7. Hard grey glazing caulking for vision lite in metal door was found to contain asbestos.
8. Exterior door framing caulking was found to contain asbestos.
9. Exterior residue door framing caulking on brick was found to contain asbestos.
10. Glue holding blackboard was assumed to contain asbestos.
11. Pipe insulation was assumed to contain asbestos.
12. Stage fire curtain was assumed to contain asbestos.
13. Transite panels were assumed to contain asbestos and assumed to exist under windows on both bridges.
14. Underground sewer pipes were assumed to contain asbestos.
15. Damproofing on exterior walls was assumed to contain asbestos. The demolition contractor will have to segregate the ACM from non-ACM building surfaces for proper disposal in an EPA approved landfill that does not recycle. A non-traditional abatement plan would have to be prepared and submitted to the DEP for approval.
16. Damproofing on exterior foundation walls was found not to contain asbestos. The damproofing was only found at the addition.
17. Testing was not performed of the roof to avoid damage. Therefore, roofing was assumed to contain asbestos. However, roofing does not have to be removed by a licensed asbestos abatement contractor. Roofing material does not have to be removed by a licensed asbestos contractor. However, the General Contractor must comply with OSHA regulation during demolition and with state regulations for proper disposal. A non-traditional abatement plan would have to be prepared and submitted to the DEP for approval.
18. All other suspect materials were found not to contain asbestos. Hidden ACM may be found during renovation and demolition activities.
19. No additional ACM was found during interior investigations.

Lord Building/Field House:

Sixty (60) bulk samples were collected from materials suspected of containing asbestos, including:

Type and Location of Suspect Material

1. Grey sink damproofing at teacher's room
2. Soft black glazing caulking for borrowed lite at main lobby
3. Vertical white caulking in CMU wall at administrative conference room
4. Dark blue vinyl floor tile at cafeteria
5. Mastic for dark blue vinyl floor tile at cafeteria
6. White with light blue vinyl floor tile at cafeteria
7. Mastic for white with light blue vinyl floor tile at cafeteria
8. White with black/grey vinyl floor tile at exit hall by administrative conference room
9. Mastic for white with black/grey vinyl floor tile at exit hall by administrative conference room
10. White with black/grey vinyl floor tile at exit hall by kitchen
11. Mastic for white with black/grey vinyl floor tile at exit hall by kitchen
12. Exterior window framing caulking at receiving
13. Exterior window soft brown glazing caulking at receiving
14. Exterior window framing caulking at kitchen
15. Exterior window soft brown glazing caulking at kitchen
16. Exterior window framing caulking for transite panel by main entrance II
17. Exterior transite panel by main entrance II
18. Exterior transite panel covering vertical steel column
19. Exterior transite panel covering vertical steel column
20. Exterior transite panel covering vertical steel column
21. Exterior window glazing caulking for transite panel by main entrance II
22. Exterior black damproofing behind brick at foundation by kitchen
23. Exterior black damproofing behind brick at foundation by kitchen
24. Joint compound at column hall by room 620
25. Joint compound at hall outside library
26. Joint compound at column by gymnasium
27. 2' x 2' Suspended acoustical ceiling tile at library computer lab
28. 2' x 2' Suspended acoustical ceiling tile at third floor copy room
29. 2' x 2' Suspended acoustical ceiling tile at library conference room
30. Fireproofing at library
31. Fireproofing at library
32. Fireproofing at library
33. Blown-in insulation in CMU wall at gymnasium
34. Older caramel vinyl floor tile at little theater storage room
35. Mastic for older caramel vinyl floor tile at little theater storage room
36. Older caramel vinyl floor tile at kitchen storage room
37. Mastic for older caramel vinyl floor tile at kitchen storage room
38. Soft black glazing caulking for vision lite in metal door at room 610
39. White with black/grey vinyl floor tile at hall outside room 610-B
40. Mastic for white with black/grey vinyl floor tile at hall outside room 610-B
41. White with black/grey vinyl floor tile at second floor hall by stairwell 6
42. Mastic for white with black/grey vinyl floor tile at second floor hall by stairwell 6
43. Adhesive for white with black/grey vinyl floor tile at hall outside library
44. Black sink damproofing at nurse
45. Exterior damproofing under brick on foundation at pool building
46. Exterior flashing protruding from brick at pool building
47. Exterior unit vent grille caulking at pool building
48. Exterior hidden caulking for transite panel encasing vertical steel column
49. Exterior hidden caulking for transite panel encasing vertical steel column

50. Transite panel encasing vertical steel column at pool building
51. Damproofing on CMU at flower bed at Trolley side
52. Exterior window framing caulking at Trolley side
53. Soft black glazing caulking for vision lite in metal door at first floor stairwell door
54. Joint compound on ceiling soffit at second floor gymnasium lobby
55. Finish on CMU wall at pool
56. Adhesive for ceramic baseboard at boy's locker room
57. Adhesive for ceramic baseboard at pool
58. Glue tab for fiberglass insulated duct at sub-basement of pool
59. Glue tab for fiberglass insulated duct at sub-basement of pool
60. Grey sealant on metal duct at sub-basement of pool

Sample Results:

Type and Location of Suspect Material	Sample Result
1. Grey sink damproofing at teacher's room	No Asbestos Detected
2. Soft black glazing caulking for borrowed lite at main lobby	3% Asbestos
3. Vertical white caulking in CMU wall at administrative conference room	2% Asbestos
4. Dark blue vinyl floor tile at cafeteria	No Asbestos Detected
5. Mastic for dark blue vinyl floor tile at cafeteria	No Asbestos Detected
6. White with light blue vinyl floor tile at cafeteria	No Asbestos Detected
7. Mastic for white with light blue vinyl floor tile at cafeteria	No Asbestos Detected
8. White with black/grey vinyl floor tile at exit hall by administrative conference room	No Asbestos Detected
9. Mastic for white/black/grey vinyl floor tile at exit hall by administrative conference room	5% Asbestos
10. White with black/grey vinyl floor tile at exit hall by kitchen	No Asbestos Detected
11. Mastic for white/black/grey vinyl floor tile at exit hall by kitchen	5% Asbestos
12. Exterior window framing caulking at receiving	No Asbestos Detected
13. Exterior window soft brown glazing caulking at receiving	5% Asbestos
14. Exterior window framing caulking at kitchen	No Asbestos Detected
15. Exterior window soft brown glazing caulking at kitchen	2% Asbestos
16. Exterior window framing caulking for transite panel by main entrance II	No Asbestos Detected
17. Exterior transite panel by main entrance II	20% Asbestos
18. Exterior transite panel covering vertical steel column	20% Asbestos
19. Exterior transite panel covering vertical steel column	20% Asbestos
20. Exterior transite panel covering vertical steel column	20% Asbestos
21. Exterior window glazing caulking for transite panel by main entrance II	2% Asbestos
22. Exterior black damproofing behind brick at foundation by kitchen	10% Asbestos
23. Exterior black damproofing behind brick at foundation by kitchen	10% Asbestos
24. Joint compound at column hall by room 620	No Asbestos Detected
25. Joint compound at hall outside library	No Asbestos Detected
26. Joint compound at column by gymnasium	No Asbestos Detected
27. 2' x 2' Suspended acoustical ceiling tile at library computer lab	No Asbestos Detected
28. 2' x 2' Suspended acoustical ceiling tile at third floor copy room	No Asbestos Detected
29. 2' x 2' Suspended acoustical ceiling tile at library conference room	No Asbestos Detected
30. Fireproofing at library	No Asbestos Detected
31. Fireproofing at library	No Asbestos Detected
32. Fireproofing at library	No Asbestos Detected
33. Blown-in insulation in CMU wall at gymnasium	No Asbestos Detected
34. Older caramel vinyl floor tile at little theater storage room	No Asbestos Detected
35. Mastic for older caramel vinyl floor tile at little theater storage room	10% Asbestos
36. Older caramel vinyl floor tile at kitchen storage room	No Asbestos Detected
37. Mastic for older caramel vinyl floor tile at kitchen storage room	10% Asbestos
38. Soft black glazing caulking for vision lite in metal door at room 610	No Asbestos Detected
39. White with black/grey vinyl floor tile at hall outside room 610-B	No Asbestos Detected

40. Mastic for white with black/grey vinyl floor tile at hall outside room 610-B	5% Asbestos
41. White with black/grey vinyl floor tile at second floor hall by stairwell 6	No Asbestos Detected
42. Mastic for white with black/grey vinyl floor tile at second floor hall by stairwell 6	No Asbestos Detected
43. Adhesive for white with black/grey vinyl floor tile at hall outside library	5% Asbestos
44. Black sink damproofing at nurse	No Asbestos Detected
45. Exterior damproofing under brick on foundation at pool building	10% Asbestos
46. Exterior flashing protruding from brick at pool building	10% Asbestos
47. Exterior unit vent grille caulking at pool building	No Asbestos Detected
48. Exterior hidden caulking for transite panel encasing vertical steel column	2% Asbestos
49. Exterior hidden caulking for transite panel encasing vertical steel column	2% Asbestos
50. Transite panel encasing vertical steel column at pool building	20% Asbestos
51. Damproofing on CMU at flower bed at Trolley side	No Asbestos Detected
52. Exterior window framing caulking at Trolley side	No Asbestos Detected
53. Soft black glazing caulking for vision lite in metal door at first floor stairwell door	No Asbestos Detected
54. Joint compound on ceiling soffit at second floor gymnasium lobby	No Asbestos Detected
55. Finish on CMU wall at pool	No Asbestos Detected
56. Adhesive for ceramic baseboard at boy's locker room	No Asbestos Detected
57. Adhesive for ceramic baseboard at pool	No Asbestos Detected
58. Glue tab for fiberglass insulated duct at sub-basement of pool	No Asbestos Detected
59. Glue tab for fiberglass insulated duct at sub-basement of pool	No Asbestos Detected
60. Grey sealant on metal duct at sub-basement of pool	No Asbestos Detected

Observations and Conclusions:

The condition of ACM is very important. ACM in good condition does not present a health issue unless it is disturbed. Therefore, it is not necessary to remediate ACM in good condition unless it will be disturbed through renovation, demolition or other activity.

Refer to the AHERA Management Plan for condition of ACM.

1. Soft black glazing caulking for borrowed lite was found to contain asbestos.
2. Vertical white caulking in CMU wall was found to contain asbestos.
3. Mastic for white with black/grey vinyl floor tile was found to contain asbestos.
4. Mastic for older caramel vinyl floor tile was found to contain asbestos.
5. Exterior window soft brown glazing caulking was found to contain asbestos.
6. Exterior transite panel was found to contain asbestos.
7. Exterior transite panel covering vertical steel column was found to contain asbestos.
8. Exterior window glazing caulking for transite panel was found to contain asbestos.
9. Glue holding tectum deck at the pool building was assumed to contain asbestos.
10. Exterior black damproofing behind brick at foundation was found to contain asbestos. The demolition contractor should segregate the ACM from non-ACM building surfaces for proper disposal in an EPA approved landfill that does not recycle. A non-traditional abatement plan would have to be prepared and submitted to the DEP for approval.
11. Exterior flashing protruding from brick was found to contain asbestos. The demolition contractor will have to segregate the ACM from non-ACM building surfaces for proper disposal in an EPA approved landfill that does not recycle. A non-traditional abatement plan would have to be prepared and submitted to the DEP for approval.
12. Exterior hidden caulking for transite panel encasing vertical steel column was found to contain asbestos.
13. Glue holding blackboard was assumed to contain asbestos.
14. Underground sewer pipes were assumed to contain asbestos.
15. Testing was not performed of the roof to avoid damage/warranty. Therefore, roofing was assumed to contain asbestos. Roofing material does not have to be removed by a licensed asbestos abatement contractor. However, the Contractor must comply with OSHA regulation during demolition and with state regulations for proper disposal. A non-traditional abatement plan would have to be prepared and submitted to the DEP for approval.
16. All other suspect materials were found not to contain asbestos. Hidden ACM may be found during renovation and demolition activities.

Freshmen Academy:

Sixty-six (66) bulk samples were collected from materials suspected of containing asbestos, including:

Type and Location of Suspect Material

1. Joint compound at loft above stage
2. Joint compound at hallway by room 712
3. Joint compound at stairwell by room 701
4. Joint compound at classroom 902
5. Joint compound at hallway by room 851
6. Joint compound at classroom 851
7. Swirl joint compound at custodian room by room 703
8. Swirl joint compound at fire panel room
9. 1'x 1' Acoustical ceiling tile at basement main corridor
10. 1'x 1' Acoustical ceiling tile at basement main corridor
11. 2'x 2' Suspended acoustical ceiling tile at hallway by room 851
12. Soft black glazing caulking for vision lite in metal door at rear exit door
13. Soft black glazing caulking for vision lite in metal door at stairwell by elevator
14. Soft black glazing caulking for borrowed lite at classroom 854
15. Soft black glazing caulking for borrowed lite at classroom 704
16. Soft black glazing caulking for vision lite in metal door at stairwell by room 701
17. Wood fire door insulation at hallway storage room
18. Wood fire door insulation at loft above stage
19. Purple sink damproofing at classroom 700
20. Grey sink damproofing at main office kitchen
21. Grey sink damproofing at classroom 720
22. Joint compound at classroom 902
23. Adhesive for rubber flooring at stairwell
24. Adhesive for rubber flooring at stairs up to security
25. Tan duct sealant at third floor HVAC room
26. Tan duct sealant at third floor HVAC room
27. Grey duct sealant at loft above stage
28. Tan sealant around sink drain at classroom 851
29. Black mastic in speaker box at loft above stage
30. Ceiling plaster at custodian room by room 703
31. Ceiling plaster at classroom 851
32. Grey sink damproofing at classroom 851
33. Adhesive on gypsum for green glazed wall tile at basement hallway
34. Light brown vinyl floor tile at kitchen storage room
35. Black mastic for light brown vinyl floor tile at kitchen storage room
36. Light grey/blue vinyl floor tile at stairwell by room 810
37. Light grey/blue vinyl floor tile at classroom 816
38. Light grey vinyl floor tile at hallway by room 810
39. Black mastic for light grey vinyl floor tile at hallway by room 810
40. Light grey vinyl floor tile at classroom 859
41. Black mastic for light grey vinyl floor tile at classroom 859
42. Light grey vinyl floor tile at main corridor by room 813
43. Black mastic for light grey vinyl floor tile at main corridor by room 813
44. Golden brown vinyl floor tile intermixed with light grey tile at classroom 901
45. Black mastic for golden brown vinyl floor tile intermixed with light grey tile at classroom 901
46. Red vinyl floor tile at classroom 856
47. Old tan vinyl floor tile at storage in room 852
48. Black mastic for old tan vinyl floor tile at storage in room 852
49. Leveler for old tan vinyl floor tile at storage in room 852

50. New white/green/red vinyl floor tile at room 717
51. Mastic for new white/green/red vinyl floor tile at room 717
52. Leveler for new white/green/red vinyl floor tile at room 717
53. New white/green/red vinyl floor tile at room 700
54. Mastic for new white/green/red vinyl floor tile at room 700
55. Leveler for new white/green/red vinyl floor tile at room 700
56. Exterior window framing caulking
57. Exterior window framing caulking
58. Exterior window framing caulking
59. Exterior residue door framing caulking
60. Exterior window framing caulking
61. Hard wall plaster at room 717
62. Ceiling plaster at room 717
63. Ceiling plaster at stairwell by room 701
64. Paint on stone foundation under stairs by room 701
65. 2' x 4' Suspended acoustical ceiling tile at main corridor by lounge
66. Exposed adhesive on wall for white board at nurse

Sample Results:

Type and Location of Suspect Material	Sample Result
1. Joint compound at loft above stage	No Asbestos Detected
2. Joint compound at hallway by room 712	No Asbestos Detected
3. Joint compound at stairwell by room 701	No Asbestos Detected
4. Joint compound at classroom 902	No Asbestos Detected
5. Joint compound at hallway by room 851	No Asbestos Detected
6. Joint compound at classroom 851	No Asbestos Detected
7. Swirl joint compound at custodian room by room 703	No Asbestos Detected
8. Swirl joint compound at fire panel room	No Asbestos Detected
9. 1'x 1' Acoustical ceiling tile at basement main corridor	No Asbestos Detected
10. 1'x 1' Acoustical ceiling tile at basement main corridor	No Asbestos Detected
11. 2'x 2' Suspended acoustical ceiling tile at hallway by room 851	No Asbestos Detected
12. Soft black glazing caulking for vision lite in metal door at rear exit door	5% Asbestos
13. Soft black glazing caulking for vision lite in metal door at stairwell by elevator	5% Asbestos
14. Soft black glazing caulking for borrowed lite at classroom 854	5% Asbestos
15. Soft black glazing caulking for borrowed lite at classroom 704	5% Asbestos
16. Soft black glazing caulking for vision lite in metal door at stairwell by room 701	5% Asbestos
17. Wood fire door insulation at hallway storage room	No Asbestos Detected
18. Wood fire door insulation at loft above stage	No Asbestos Detected
19. Purple sink damproofing at classroom 700	10% Asbestos
20. Grey sink damproofing at main office kitchen	No Asbestos Detected
21. Grey sink damproofing at classroom 720	No Asbestos Detected
22. Joint compound at classroom 902	No Asbestos Detected
23. Adhesive for rubber flooring at stairwell	No Asbestos Detected
24. Adhesive for rubber flooring at stairs up to security	No Asbestos Detected
25. Tan duct sealant at third floor HVAC room	No Asbestos Detected
26. Tan duct sealant at third floor HVAC room	No Asbestos Detected
27. Grey duct sealant at loft above stage	No Asbestos Detected
28. Tan sealant around sink drain at classroom 851	2% Asbestos
29. Black mastic in speaker box at loft above stage	10% Asbestos
30. Ceiling plaster at custodian room by room 703	No Asbestos Detected
31. Ceiling plaster at classroom 851	No Asbestos Detected
32. Grey sink damproofing at classroom 851	No Asbestos Detected
33. Adhesive on gypsum for green glazed wall tile at basement hallway	No Asbestos Detected

34. Light brown vinyl floor tile at kitchen storage room	No Asbestos Detected
35. Black mastic for light brown vinyl floor tile at kitchen storage room	No Asbestos Detected
36. Light grey/blue vinyl floor tile at stairwell by room 810	No Asbestos Detected
37. Light grey/blue vinyl floor tile at classroom 816	No Asbestos Detected
38. Light grey vinyl floor tile at hallway by room 810	No Asbestos Detected
39. Black mastic for light grey vinyl floor tile at hallway by room 810	No Asbestos Detected
40. Light grey vinyl floor tile at classroom 859	No Asbestos Detected
41. Black mastic for light grey vinyl floor tile at classroom 859	No Asbestos Detected
42. Light grey vinyl floor tile at main corridor by room 813	No Asbestos Detected
43. Black mastic for light grey vinyl floor tile at main corridor by room 813	No Asbestos Detected
44. Golden brown vinyl floor tile intermixed with light grey tile at classroom 901	No Asbestos Detected
45. Mastic for golden brown vinyl floor tile intermixed with light grey tile at classroom 901	No Asbestos Detected
46. Red vinyl floor tile at classroom 856	No Asbestos Detected
47. Old tan vinyl floor tile at storage in room 852	No Asbestos Detected
48. Black mastic for old tan vinyl floor tile at storage in room 852	No Asbestos Detected
49. Leveler for old tan vinyl floor tile at storage in room 852	No Asbestos Detected
50. New white/green/red vinyl floor tile at room 717	No Asbestos Detected
51. Mastic for new white/green/red vinyl floor tile at room 717	No Asbestos Detected
52. Leveler for new white/green/red vinyl floor tile at room 717	No Asbestos Detected
53. New white/green/red vinyl floor tile at room 700	No Asbestos Detected
54. Mastic for new white/green/red vinyl floor tile at room 700	No Asbestos Detected
55. Leveler for new white/green/red vinyl floor tile at room 700	No Asbestos Detected
56. Exterior window framing caulking	No Asbestos Detected
57. Exterior window framing caulking	No Asbestos Detected
58. Exterior window framing caulking	No Asbestos Detected
59. Exterior residue door framing caulking	No Asbestos Detected
60. Exterior window framing caulking	No Asbestos Detected
61. Hard wall plaster at room 717	No Asbestos Detected
62. Ceiling plaster at room 717	No Asbestos Detected
63. Ceiling plaster at stairwell by room 701	No Asbestos Detected
64. Paint on stone foundation under stairs by room 701	No Asbestos Detected
65. 2' x 4' Suspended acoustical ceiling tile at main corridor by lounge	No Asbestos Detected
66. Exposed adhesive on wall for white board at nurse	No Asbestos Detected

Observations and Conclusions:

The condition of ACM is very important. ACM in good condition does not present a health issue unless it is disturbed. Therefore, it is not necessary to remediate ACM in good condition unless it will be disturbed through renovation, demolition or other activity.

Refer to the AHERA Management Plan for condition of ACM.

1. Soft black glazing caulking for vision lite in metal door was found to contain asbestos.
2. Soft black glazing caulking for borrowed lite was found to contain asbestos.
3. Purple sink damproofing was found to contain asbestos.
4. Tan sealant around sink drain was found to contain asbestos.
5. Black mastic in speaker box was found to contain asbestos.
6. Underground sewer pipes were assumed to contain asbestos.
7. Damproofing on exterior and foundation walls was assumed to contain asbestos. The demolition contractor should segregate the ACM from non-ACM building surfaces for proper disposal in an EPA approved landfill that does not recycle. A non-traditional abatement plan would have to be prepared and submitted to the DEP for approval.
8. Testing was not performed of the roof to avoid damage. Therefore, roofing was assumed to contain asbestos. However, roofing does not have to be removed by a licensed asbestos abatement contractor. Roofing material does not have to be removed by a licensed asbestos contractor. However, the General Contractor must comply

with OSHA regulation during demolition and with state regulations for proper disposal. A non-traditional abatement plan would have to be prepared and submitted to the DEP for approval.

9. All other suspect materials were found not to contain asbestos. Hidden ACM may be found during renovation and demolition activities.
10. **No additional ACM was found during interior investigations.**

Steam Plant:

Sixteen (16) bulk samples were collected from materials suspected of containing asbestos, including:

Type and Location of Suspect Material

1. Interior door framing caulking at entrance to generator room
2. Interior door framing caulking at entrance to generator room
3. Generator exhaust insulation
4. Generator exhaust insulation
5. Generator exhaust insulation
6. Tan cement in boiler end section
7. Tan cement in boiler end section
8. Paint on brick wall
9. Paint on brick wall
10. Paint on concrete floor
11. Exterior window framing caulking
12. Exterior window framing caulking
13. Exterior unit vent grille caulking
14. Glazing caulking for small window in old wood door
15. Glazing caulking for small window in old wood door
16. Old brick floor in front on boilers

Sample Results:

Type and Location of Suspect Material

Sample Result

- | | |
|---|----------------------|
| 1. Interior door framing caulking at entrance to generator room | No Asbestos Detected |
| 2. Interior door framing caulking at entrance to generator room | No Asbestos Detected |
| 3. Generator exhaust insulation | No Asbestos Detected |
| 4. Generator exhaust insulation | No Asbestos Detected |
| 5. Generator exhaust insulation | No Asbestos Detected |
| 6. Tan cement in boiler end section | No Asbestos Detected |
| 7. Tan cement in boiler end section | No Asbestos Detected |
| 8. Paint on brick wall | No Asbestos Detected |
| 9. Paint on brick wall | No Asbestos Detected |
| 10. Paint on concrete floor | No Asbestos Detected |
| 11. Exterior window framing caulking | No Asbestos Detected |
| 12. Exterior window framing caulking | No Asbestos Detected |
| 13. Exterior unit vent grille caulking | No Asbestos Detected |
| 14. Glazing caulking for small window in old wood door | No Asbestos Detected |
| 15. Glazing caulking for small window in old wood door | No Asbestos Detected |
| 16. Old brick floor in front on boilers | No Asbestos Detected |

Observations and Conclusions:

The condition of ACM is very important. ACM in good condition does not present a health issue unless it is disturbed. Therefore, it is not necessary to remediate ACM in good condition unless it will be disturbed through renovation, demolition or other activity.

Refer to the AHERA Management Plan for condition of ACM.

1. Pipe insulation was assumed to contain asbestos. The insulation was found in metal elevated enclosure leaving the plant to Freshmen Academy.
2. Exterior flashing protruding from foundation was found to contain asbestos. The demolition contractor will have to segregate the ACM from non-ACM building surfaces for proper disposal in an EPA approved landfill that does not recycle. A non-traditional abatement plan would have to be prepared and submitted to the DEP for approval.
3. Underground sewer pipes were assumed to contain asbestos.
4. Damproofing on exterior and foundation walls was assumed to contain asbestos. The demolition contractor should be segregate the ACM from non-ACM building surfaces for proper disposal in an EPA approved landfill that does not recycle. A non-traditional abatement plan would have to be prepared and submitted to the DEP for approval.
5. All other suspect materials were found not to contain asbestos. Hidden ACM may be found during renovation and demolition activities.

Polychlorinated Biphenyls (PCB's)-Electrical Equipment and Light Fixtures:

Observations and Conclusions:

Visual inspection of various equipments such as light fixtures, thermostats, exit signs and switches was performed for the presence of PCB's and mercury. Ballasts in light fixtures were assumed not to contain PCB's since there were labels indicating that "No PCB's" was found. Tubes in light fixtures, thermostats, signs and switches were assumed to contain mercury. It would be very costly to test those equipments and dismantling would be required to access. Therefore, the above mentioned equipments should be considered to contain PCB's and mercury and disposed in an EPA approved landfill as part of the demolition project.

PCB's in Caulking:

PCB's are manmade chemicals that were widely produced and distributed across the country from the 1950s to 1977 until the production of PCB's was banned by the US Environmental Protection Agency (EPA) law which became effective in 1978. PCB's are a class of chemicals made up of more than 200 different compounds. PCB's are non-flammable, stable, and good insulators so they were widely used in a variety of products including: electrical transformers and capacitors, cable and wire coverings, sealants and caulking, and household products such as television sets and fluorescent light fixtures. Because of their chemical properties, PCB's are not very soluble in water and they do not break down easily in the environment. PCB's also do not readily evaporate into air but tend to remain as solids or thick liquids. Even though PCB's have not been produced or used in the country for more than 30 years, they are still present in the environment in the air, soil, and water and in our food. EPA requires that all construction waste including caulking be disposed as PCB's if PCB's level exceed 50 mg/kg (ppm). An abatement plan might also be required.

Observations and Conclusions:

Building materials and caulking were assumed to contain PCB's.

Lead Based Paint (LBP):

Observations and Conclusions:

LBP was assumed to exist on painted surfaces in all areas constructed prior to 1978. A school is not considered a regulated facility. All LBP activities performed, including waste disposal, should be in accordance with applicable Federal, State, or local laws, ordinances, codes or regulations governing evaluation and hazard reduction. In the event of discrepancies, the most protective requirements prevail. These requirements can be found in OSHA 29 CFR 1926-Construction Industry Standards, 29 CFR 1926.62-Construction Industry Lead Standards, 29 CFR 1910.1200-Hazards Communication, 40 CFR 261-EPA Regulations. Per OSHA, any amount of LBP triggers compliance.

Mercury in Rubber Flooring:

Lord Building/Field House:

Number of Samples Collected:

Two (2) bulk samples were collected from the rubber flooring:

Type and Location of Suspect Material

1. Rubber floor at gymnasium
2. Rubber floor at gymnasium ramp down to pool

Sample Results:

Type and Location of Suspect Material

Sample Result

- | | |
|--|----------|
| 1. Rubber floor at gymnasium | 90 mg/kg |
| 2. Rubber floor at gymnasium ramp down to pool | 60 mg/kg |

Observations and Conclusions:

Samples results of the rubber flooring indicated the presence of high level of mercury. Mercury was assumed to have leached into the concrete slab. Sampling would be required to determine extent of contamination/leaching.

Airborne Mold:

Airborne mold testing was performed utilizing Zefon International Incorporated’s Air-O-Cell® sampling device following all manufacturer supplied recommended sampling procedures. Air-O-Cell® is a direct read total particulate air sampling device. It works using the inertial impaction principle like other spore trap devices. It is designed for the rapid collection and analysis of airborne particulate including bioaerosols. The particulate includes fibers (e.g. asbestos, fiberglass, cellulose, clothing fibers) opaque particles (e.g. fly ash, combustion particles, copy toner, oil droplets, paint), and bioaerosols (e.g. mold spores, pollen, insect parts, skin cell fragments).¹

The method involves drawing a known quantity of air through a sterile sampling cassette. After sampling, the cassette is sealed and transferred to a microbiology laboratory under chain of custody protocol for microscopic analysis. This method counts both viable and nonviable mold spores.

There are currently no guidelines or standards promulgated by a government agency or widely recognized scientific organizations for the interpretation of airborne mold spore levels. The most commonly employed tool used to assess if mold growth is occurring and there is amplification in a structure is to evaluate the indoor levels and species as well as to compare levels and species of mold outdoors to indoors. Typically, if there were more molds indoors, and/or if species were present indoors which were not present outdoors, then growth and amplification is likely occurring and further evaluation and perhaps remediation is recommended.

1922 Building:

AIRBORNE MOLD and PARTICULATE

Lab ID #	Location	Total Mold Counts/M ³	Pollen	Insect Fragment	Hyphal Fragments
131604602-0001	Classroom 014	4,470	ND	ND	ND

¹ Zefon International Inc. <www.zefon.com>

Lab ID #	Location	Total Mold Counts/M ³	Pollen	Insect Fragment	Hyphal Fragments
131604602-0002	Custodian Room by Stairwell C	14,197	20	7	40
131604602-0003	Band Storage Room	4,671	20	ND	ND
131604602-0004	Classroom 029	8,520	10	ND	20
131604602-0005	Classroom 028	11,287	10	ND	20
131604602-0006	Classroom 012	11,387	10	ND	ND
131600829-0007	Outside of Building	17,807	70	ND	20

**AIRBORNE MOLD and PARTICULATE
(Subjective Scales)**

Lab ID #	Location	Skin Fragment Density (SFD)	Fibrous Particulates (FP)	Total Background Particulate (TBP)
131604602-0001	Classroom 014	2	1	1
131604602-0002	Custodian Room by Stairwell C	2	1	3
131604602-0003	Band Storage Room	2	1	2
131604602-0004	Classroom 029	2	1	3
131604602-0005	Classroom 028	2	1	2
131604602-0006	Classroom 012	2	1	2
131604602-0007	Outside of Building	1	1	3

Observations and Conclusions:

The indoor airborne mold spore concentrations were lower than the outside sample. Based on comparisons with historical data from projects of similar type, building utilization, geographic location and season, the indoor airborne levels are considered high. Indoor mold spore counts in early fall are typically in the 4,500-6,500-spores/cubic meter range.

Breathing zone indoor samples indicated the presence of several common types of mold which are not considered to be hazardous and were also found outside. Levels inside are most likely being migrated from outside, which might indicate the higher levels of certain types of mold.

Pollen, insect fragments and Hyphal fragments were either not present or low in the samples. Hyphal fragment is a non-reproductive part of the mold.

Total background particulate on all samples was assessed as "1-3" on a scale of 1-5 where 1 is low and 5 is high. Skin fragment density on all samples was assessed as "1-2" on a scale of 1-4 where 1 is low and 4 is high. The total background levels are measured to determine airborne dust not related to airborne mold. Skin fragments are measured to determine proper housing cleaning.

Lord Building/Field House:

AIRBORNE MOLD and PARTICULATE

Lab ID #	Location	Total Mold Counts/M ³	Pollen	Insect Fragment	Hyphal Fragments
131604500-0001	Hallway by Room 432-A	1,797	ND	ND	ND
131604500-0002	Cafeteria	3,374	ND	ND	ND
131604500-0003	Hallway by Nurse	1,300	10	ND	ND
131604500-0004	Administrative Conference Room	3,361	ND	7	ND
131604500-0005	Hallway by Security	1,304	ND	ND	ND
131604500-0006	Hallway by Receiving	8,227	10	ND	ND
131604500-0007	Outside of Building	10,170	ND	ND	ND

**AIRBORNE MOLD and PARTICULATE
(Subjective Scales)**

Lab ID #	Location	Skin Fragment Density (SFD)	Fibrous Particulates (FP)	Total Background Particulate (TBP)
131604500-0001	Hallway by Room 432-A	2	1	2
131604500-0002	Cafeteria	3	1	3
131604500-0003	Hallway by Nurse	2	1	2
131604500-0004	Administrative Conference Room	2	1	1
131604500-0005	Hallway by Security	1	1	1
131604500-0006	Hallway by Receiving	3	1	2
131604500-0007	Outside of Building	1	1	1

Legend:

ND - Not Detected

Observations and Conclusions:

The indoor airborne mold spore concentrations were lower than the outside sample. Based on comparisons with historical data from projects of similar type, building utilization, geographic location and season, the indoor airborne levels are considered low. Indoor mold spore counts in late summer are typically in the 6,500-9,500-spores/cubic meter range.

Breathing zone indoor samples indicated the presence of several common types of mold which are not considered to be hazardous and were also found outside.

Pollen, insect fragments and Hyphal fragments were either not present or low in the samples. Hyphal fragment is a non-reproductive part of the mold.

Total background particulate on all samples was assessed as "1-2" on a scale of 1-5 where 1 is low and 5 is high. Skin fragment density on all samples was assessed as "1" on a scale of 1-4 where 1 is low and 4 is high. The total

background levels are measured to determine airborne dust not related to airborne mold. Skin fragments are measured to determine proper housing cleaning.

Freshmen Academy:

AIRBORNE MOLD and PARTICULATE

Lab ID #	Location	Total Mold Counts/M ³	Pollen	Insect Fragment	Hyphal Fragments
131604840-0001	Classroom 702	1,920	ND	ND	ND
131604840-0002	Classroom 703	3,337	ND	ND	ND
131604840-0003	Hallway by Classroom 704	2,764	7	ND	ND
131604840-0004	Classroom 701	1,580	ND	ND	ND
131604840-0005	Classroom 704	2,267	ND	ND	ND
131604840-0006	Theater	2,257	ND	ND	ND
131600829-0007	Outside Building	5,640	10	ND	ND

**AIRBORNE MOLD and PARTICULATE
(Subjective Scales)**

Lab ID #	Location	Skin Fragment Density (SFD)	Fibrous Particulates (FP)	Total Background Particulate (TBP)
131604840-0001	Classroom 702	3	1	3
131604840-0002	Classroom 703	3	1	2
131604840-0003	Hallway by Classroom 704	3	1	4
131604840-0004	Classroom 701	3	1	3
131604840-0005	Classroom 704	2	1	2
131604840-0006	Theater	2	1	1
131600829-0007	Outside Building	1	1	2

Observations and Conclusions:

The indoor airborne mold spore concentrations were lower than the outside sample. Based on comparisons with historical data from projects of similar type, building utilization, geographic location and season, the indoor airborne levels are considered low. Indoor mold spore counts in early fall are typically in the 4,500-6,500-spores/cubic meter range.

Breathing zone indoor samples indicated the presence of several common types of mold which are not considered to be hazardous and were also found outside.

Pollen, insect fragments and Hyphal fragments were either not present or low in the samples. Hyphal fragment is a non-reproductive part of the mold.

Total background particulate on all samples was assessed as "1-3" on a scale of 1-5 where 1 is low and 5 is high. Skin fragment density on all samples was assessed as "1-3" on a scale of 1-4 where 1 is low and 4 is high. The total background levels are measured to determine airborne dust not related to airborne mold. Skin fragments are measured to determine proper housing cleaning.

Radon:

Number of Samples Collected

1922 Building:

Number of Samples Collected

Seven (7) air samples were collected at the following locations:

Location of Material

1. Basement room 014
2. Basement custodian stairwell
3. Basement band storage room
4. Basement room 029
5. Basement room 028
6. Basement fan room
7. Basement room 012

Sample Results:

Location of Material

Sample Result

- | | |
|---------------------------------|------------|
| 1. Basement room 014 | 0.7 pCi/L |
| 2. Basement custodian stairwell | <0.4 pCi/L |
| 3. Basement band storage room | 0.5 pCi/L |
| 4. Basement room 029 | 0.5 pCi/L |
| 5. Basement room 028 | 0.4 pCi/L |
| 6. Basement fan room | 0.5 pCi/L |
| 7. Basement room 012 | <0.4 pCi/L |

Observations and Conclusions:

The measured radon concentrations of the samples were found to be lower than the EPA guideline of 4 picoCuris of radon per liter of air (pCi/L). No further action is required.

Lord Building/Field House:

Six (6) air samples were collected at the following locations:

Location of Material

1. First floor main office
2. First floor student postings storage room
3. First floor custodial room
4. First floor administrative conference room
5. First floor athletic director office
6. First floor teacher's room

Sample Results:

Location of Material

Sample Result

- | | |
|--|------------|
| 1. First floor main office | <0.4 pCi/L |
| 2. First floor student postings storage room | <0.4 pCi/L |

- | | |
|---|------------|
| 3. First floor custodial room | <0.4 pCi/L |
| 4. First floor administrative conference room | <0.4 pCi/L |
| 5. First floor athletic director office | <0.4 pCi/L |
| 6. First floor teacher's room | <0.4 pCi/L |

Observations and Conclusions:

The measured radon concentrations of the samples were found to be lower than the EPA guideline of 4 picoCuris of radon per liter of air (pCi/L). No further action is required.

Freshmen Academy:

Number of Samples Collected

Seven (7) air samples were collected at the following locations:

Location of Material

1. Basement room 702
2. Basement room 703
3. Basement storage room 703/704
4. Basement storage room 701/702
5. Basement room 704
6. Basement room 705
7. Basement small hall rear of stage

Sample Results:

Location of Material	Sample Result
1. Basement room 702	1.3 pCi/L
2. Basement room 703	1.4 pCi/L
3. Basement storage room 703/704	2.2 pCi/L
4. Basement storage room 701/702	6.2 pCi/L
5. Basement room 704	0.9 pCi/L
6. Basement room 705	0.7 pCi/L
7. Basement small hall rear of stage	1.1 pCi/L

Observations and Conclusions:

The measured radon concentrations of the samples were found to be lower than the EPA guideline of 4 picoCuris of radon per liter of air (pCi/L) except for one sample collected Basement storage room 701/702 (6.2 pCi/L). A mitigation system is recommended. No further action is required at other areas.

3.0 COST ESTIMATES:

The cost includes removal and disposal of all accessible ACM, other hazardous material and an allowance for removal of inaccessible or hidden ACM that may be found during renovation or demolition project. No additional suspect and accessible ACM were found during this survey. Hidden ACM may be found during renovation or demolition activities. Quantities listed below were based on actual field measurement and should be within 5% +/-.

Location	Material	Approximate Quantity	Cost Estimate (\$)
1922 Building:			
	Glue Daub on Ceiling Plaster	4,000 SF	20,000.00

Location	Material	Approximate Quantity	Cost Estimate (\$)
	Borrowed lite	500 Total	50,000.00
	Vision Lite Windows in Doors	125 Total	25,000.00
	Flooring Materials and Mastic	43,000 SF	172,000.00
	Chalkboards	500 Total	75,000.00
	Miscellaneous Hazardous Materials and Hidden ACM	Unknown	25,000.00
	Light Fixtures Tubes	6,500 Total	65,000.00
Bridges	Transite Panels	1,600 SF	16,000.00
Stage	Fire Curtain	1 Total	7,500.00
Science Rooms	Transite Tables	25 Total	12,500.00
Basement Fan Room	Pipe Insulation	50 LF	2,500.00
Exterior	Doors	30 Total	6,000.00
	Roofing Materials	58,900 SF	176,700.00
	Transite Sewer Pipes	Unknown ¹	25,000.00
	Thru-Wall Flashing	Unknown ¹	25,000.00
	Damproofing on Exterior Walls	2,000 Tons ¹	250,000.00
PCB's Remediation ²			50,000.00
Estimated costs for PCB's Testing and Abatement Plans Services ²			10,000.00
Estimated costs for NESHAP Inspection and Testing Services			12,500.00
Estimated costs for Design, Construction Monitoring and Air Sampling Services			99,300.00
TOTAL:			\$ 1,125,000.00
Lord Building/Field House:			
	Borrowed lite	425 Total	63,750.00
	Interior Vertical Caulking in CMU	3,500 LF	35,000.00
	Various Types of Flooring Materials and Mastic	95,000 SF	380,000.00
	Tectum Deck and Glue	7,500 SF	35,000.00
	Chalkboards	125 Total	25,000.00
	Miscellaneous Hazardous Materials	Unknown	25,000.00
	Hidden ACM	Unknown	25,000.00
	Light Fixtures Tubes	6,500 Total	65,000.00
Gymnasium/Ramp	Rubber Flooring/Cement	25,000 SF	250,000.00
Exterior	Windows	550 Total	137,500.00
	Transite Panels	8,000 SF	80,000.00
	Caulking on Transite Panels	5,000 LF	25,000.00
	Roofing Materials	51,720 SF	155,160.00
	Transite Sewer Pipes	Unknown ¹	25,000.00
	Thru-Wall Flashing	1,250 LF ¹	25,000.00
	Damproofing on Exterior and Foundation Walls	4,500 Tons ¹	562,500.00
PCB's Remediation ²			250,000.00
Estimated costs for PCB's Testing and Abatement Plans Services ²			50,000.00
Estimated costs for NESHAP Inspection and Testing Services			12,500.00

Location	Material	Approximate Quantity	Cost Estimate (\$)
Estimated costs for Design, Construction Monitoring and Air Sampling Services			198,590.00
TOTAL:			\$ 2,425,000.00
Freshmen Academy:			
	Borrowed lite	230 Total	46,000.00
	Vision Lite Windows in Doors	27 Total	2,700.00
	Mastic on Speaker Boxes	70 Total	3,500.00
	Sinks	25 Total	2,500.00
	Sinks Drains	35 Total	3,500.00
	Miscellaneous Hazardous Materials and Hidden ACM	Unknown	5,000.00
	Light Fixtures Tubes	3,500 Total	35,000.00
Exterior	Roofing Materials	31,970 SF	95,910.00
	Transite Sewer Pipes	Unknown ¹	25,000.00
	Thru-Wall Flashing	Unknown ¹	25,000.00
	Damproofing on Exterior and Foundation Walls	1,000 Tons ¹	125,000.00
PCB's Remediation ²			25,000.00
Estimated costs for PCB's Testing and Abatement Plans Services ²			10,000.00
Estimated costs for NESHAP Inspection and Testing Services			8,500.00
Estimated costs for Design, Construction Monitoring and Air Sampling Services			47,390.00
TOTAL:			\$ 460,000.00
Steam Plant:			
	Pipe Insulation	90 LF	6,500.00
	Miscellaneous Hazardous Materials and Hidden ACM	Unknown	2,000.00
	Light Fixtures Tubes	250 Total	2,500.00
Exterior	Roofing Materials	2,111 SF	6,333.00
	Thru-Wall Flashing	Unknown ¹	5,000.00
	Damproofing on Foundation Walls	Unknown ¹	25,000.00
Estimated costs for Design, Construction Monitoring and Air Sampling Services			9,667.00
Multiple Phasing cost			123,000.00
TOTAL:			\$ 57,000.00
GRAND TOTAL:			\$ 4,200,000.00

¹: Part of total demolition/Site Work.

²: Should results exceed EPA limit.

4.0 DESCRIPTION OF SURVEY METHODS AND LABORATORY ANALYSES:

Asbestos:

Asbestos samples were collected using a method that prevents fiber release. Homogeneous sample areas were determined by criteria outlined in EPA document 560/5-85-030a. Bulk material samples were analyzed using PLM and dispersion staining techniques with EPA method 600/M4-82-020 by EPA licensed laboratories Asbestos Identification Laboratory and EMSL, Woburn, MA.

Mercury in Rubber Flooring:

Bulk sample was analyzed in accordance with EPA method 7471B by an EPA approved laboratory EMSL, Cinnaminson, NJ.

Airborne Mold:

The samples were analyzed by an EPA approved laboratory EMSL, Woburn, MA.

Radon:

Radon samples were analyzed by an EPA licensed laboratory AccuStar, Medway, MA.

5.0 LIMITATIONS AND CONDITIONS:

This report has been completed based on visual and physical observations made and information available at the time of the site visits, as well as an interview with the Owner's representatives. This report is intended to be used as a summary of available information on existing conditions with conclusions based on a reasonable and knowledgeable review of evidence found in accordance with normally accepted industry standards, state and federal protocols, and within the scope and budget established by the client. Any additional data obtained by further review must be reviewed by UEC and the conclusions presented herein may be modified accordingly.

This report and attachments, prepared for the exclusive use of Owner for use in an environmental evaluation of the subject site, are an integral part of the inspections and opinions should not be formulated without reading the report in its entirety. No part of this report may be altered, used, copied or relied upon without prior written permission from UEC, except that this report may be conveyed in its entirety to parties associated with Owner for this subject study.

Inspected By:



Leonard J. Busa
Asbestos Inspector (AI-030673)

Inspected By:



Jason Becotte
Asbestos Inspector (AI-034963)