MONITORING AND MAINTENANCE IMPLEMENTATION PLAN

THOMAS PRINCE SCHOOL
PRINCETON, MASSACHUSETTS

ATC PROJECT NO. 0321663000
DOCUMENT NO. 48449
October 17, 2017

Prepared by:

ATC Group Services LLC
997 Millbury Street
Worcester, MA 01607
Phone: (508) 756-0151

Prepared for:

United States EPA
5 Post Office Sq., Ste. 100 (OSRR07-2)
Boston, MA 02109-3912
Attn: Kimberley N. Tisa, PCB Coordinator

Prepared on behalf of:

Town of Princeton
6 Town Hall Drive
Princeton, MA 01541
Nina Nazarian, Town Administrator

TABLE OF CONTENTS

1.0 MONITORING AND MAINTENANCE IMPLEMENTATION PLAN 1
1.1 INTRODUCTION 1
1.2 OBJECTIVE 1
1.3 OWNERS PRIMARY CONTACT INFORMATION 1

2.0 BACKGROUND AND SCHOOL DESCRIPTION 2

3.0 DESCRIPTION OF MONITORING AND MAINTENANCE ACTIVITIES 4
3.1 INSPECTION AND MONITORING ACTIVITIES 4
3.1.1 Encapsulated Surface Inspection Criteria and Frequency 4
3.1.2 Encapsulated Surface Sample Collection Protocols, Analytical Criteria and Frequency 5
3.1.3 Indoor Air Sample Collection Protocols, Analytical Criteria and Frequency ... 6
3.2 ACTION LEVELS AND ROUTINE MAINTENANCE ACTIVITIES 7
3.2.1 Epoxy Coated Porous Surfaces of Interior and Exterior Areas 7
3.2.2 Indoor Air Sampling Results 8

4.0 REPORTING REQUIREMENTS 10
4.1 REPORTING 10

5.0 COMMUNICATION 11

6.0 WORKER TRAINING 12

7.0 LIMITATIONS 14

FIGURES:

Figure 1 Site Locus
Figure 2 Room ID Plan

TABLES:

Table 1 Historical Indoor Air Analytical Results USEPA Method TO-10A
Table 2 Long Term Monitoring Wipe Sample Analytical Results for *Porous Surfaces* - since March, 2012

APPENDICES:

Appendix A Timeline April 2011-August 2017
Appendix B Photos of Representative Epoxy Coated Porous Surfaces Applicable to the MMIP
Appendix C Inspection and Maintenance Logs Templates

Abbreviations and Acronyms

ACO	Administrative Consent Order
ADD	Average Daily Dose
ADE	Average Daily Exposure
ATSDR	Agency for Toxic Substances and Disease Registry
BMP	Best Management Practices
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
cfm	Cubic feet per minute
cm^2	Square Centimeter
CSF	Cancer Slope Factor
CSM	Conceptual Site Model
DQA	Data Qaulity Assessment
DQO	Data Qaulity Objective
DUE	Data Usability Evaluation
ELCR	Excess Lifetime Cancer Risk
EPA	Environmental Protection Agency
ft	Foot
GC/FID	Gas Chromatogram/Flame Ionization Detector
IAS	Indoor Air Sample
in. HG	inches of mercury
ID	Inside Diameter
IRIS	Integrated Risk Information System
kg	Kilogram
m^3	Cubic meter
MDL	Method Detection Limit
mg	milligram
mg/g	milligrams per gram
mg/m^3	milligrams per cubic meter
mg/L	milligrams per liter
MMIP	Monitoring and Maintenance Implementation Plan
Mod	Modification
msl	Mean Sea Level
MW	Monitoring Well
ND	Non-detect - not detected above laboratory reporting limit or instrument detection limit.
ng/m^3	Nanogram per cubic meter
NGVD	National Geodetic Vertical Datum
NPL	National Priority List
OD	Outside Diameter
OSHA	Occupational Safety and Health Administration
OSWER	EPA Office of Solid Waste and Emergency Response
PARCSS	Precision, Accuracy, Representativeness, Comparability, Completeness and Sensitivity
PCB	Polychlorinated Biphenyl
PUF	Polyurethane Foam
PVC	Polyvinyl Chloride
QAPP	Quality Assessment Project Plan
RAF's	Relative Absorption Factors
RBC	Risk Based Concentration
RfD	Reference Dose
sf	Square Feet
SOP	Standard Operating Procedures
SOW	Scope-of-Work
TAC	Target Indoor Air Concentration
TSCA	Toxic Substances Control Act
ug/g	micrograms per gram
ug/Kg	micrograms per kilogram
ug/L	micrograms per liter
ug/m^3	microgram per cubic meter
USEPA	United States Environmental Protection Agency
UTM	Universal Transverse Mercator
WS	Wipe Sample

REGULATORY AGENCIES

USEPA	United States Environmental Protection Agency

SUBCONTRACTORS

Abbreviations and Acronyms

ATC	ATC Group Services, LLC
ECS	Environmental Compliance Services, Inc.
Eurofins/Spectrum	Eurofins/Spectrum Analytical, Inc. , Agawam, MA

1.0 MONITORING AND MAINTENANCE IMPLEMENTATION PLAN

1.1 INTRODUCTION

ATC Group Services LLC (ATC), on behalf of the Town of Princeton, Massachusetts has prepared this Monitoring and Maintenance Implementation Plan to assess the long-term effectiveness of a two-layer epoxy coating applied to portions of interior and exterior walls as part of the PCB assessment and remediation activities completed at the Thomas Prince School located at 170 Sterling Road in Princeton, Massachusetts. This plan has been prepared in general accordance with Conditions 20 (a), (b) and (c) of the U.S. Environmental Protection Agency's February 21, 2012 and September 17, 2012 PCB Risk-Based Disposal Plan approval letters (Approvals) in accordance with 40 CFR §761.61 (c), §761.62 (c) and §761.79(h). This MMIP includes the recommended provisions for the long-term monitoring and maintenance activities that shall be conducted pertaining to certain epoxy coated porous surfaces of interior/exterior walls at the Thomas Prince School. The monitoring provisions include the surface wipe sampling of epoxy coated porous surfaces and the sampling and analysis of indoor air. Refer to **Figure 1** for the geographic location of the subject school and **Figure 2** for a detail layout of the school and its rooms. Refer to the acronym list which follows the Table of Contents for a listing of common acronyms utilized within this report.

1.2 OBJECTIVE

The objective of this plan is to document the requirements and procedures for long-term monitoring and maintenance of the two-layer epoxy coated portions of the interior and exterior porous surfaces that immediately surround the windows in the 100-Wing and 200-Wing classrooms and the applicable exterior air intake vents. Long-term monitoring is required to evaluate the effectiveness of the epoxy coating over time at mitigating the exposure pathways to PCBs which remain in the substrate materials at concentrations >1 mg/kg. These substrate materials include the interior concrete block walls, the exterior concrete columns and the exterior brick facade which immediately surround the windows and exterior air intake vents of the aforementioned rooms. Maintenance of the epoxy coated surfaces shall be performed as needed based on the results of monitoring activities. As stipulated by EPA, monitoring and maintenance of the epoxy coated surfaces are to be conducted until such time that the EPA determines, in writing, that such activities are no longer necessary.

1.3 OWNERS PRIMARY CONTACT INFORMATION

Town of Princeton primary contact:

Ms. Nina Nazarian
Town Administrator
Town of Princeton
6 Town Hall Drive
Princeton, Massachusetts 01541
townadministrator@town.princeton.ma.us

2.0 BACKGROUND AND SCHOOL DESCRIPTION

The Thomas Prince School is located in the Town of Princeton, Massachusetts, is owned by the Town of Princeton and is operated by the Wachusett Regional School District as an elementary and middle school. The Thomas Prince School building is a slab-on-grade concrete block building with a brick façade that has a footprint of approximately 76,000 square feet. The northeast portion of the existing building, comprising approximately 32,000 square feet, was constructed in 1962 and is the subject of this MMIP. A large addition to the original building of approximately 44,000 square feet was constructed in 1991 and is located west and south of the original structure. In 1991, at the time the addition was constructed, the windows of the 100-Wing classrooms were replaced. The subject school building is surrounded by athletic fields to the east beyond which are residential properties, forested land to the south, residential property to the east and Sterling Road (Route 62) to the North, beyond which is forested land. Refer to **Figure 2** for the school interior layout.

According to school administration, the school currently serves approximately 400 students in the grades of kindergarten through eight and approximately 60 fulltime/part time educators. The school is occupied for typical school session from late August through June between the hours of 8:30 AM to 3 PM on weekdays. School sponsored "before and after care programming" occurs for an additional 3.5 hours per day. Also, the school is used for childhood activities during the summer on a varying schedule.

In April 2011, during preparation for a window replacement project being performed as part of Green Repair Program administered under the Massachusetts School Building Authority, analysis of samples of window caulking and window glazing material collected from the portion of the school that was constructed circa 1962 indicated the presence of PCB's in those building materials. Additional sampling, conducted in 2011 and 2012, confirmed the presence of PCB's in window caulking and indicated the presence of PCB's in exterior structural joint caulking and adjacent interior/exterior porous surfaces. PCB's in building materials is regulated under the Toxic Substances Control Act (TSCA, 40 CFR, Part 761). Use of PCB's in building materials is an unauthorized use under this act. Thus, notification of the presence of PCB's in the building materials was made to EPA.

Multiple rounds of indoor air sampling and analysis for PCB's, as well as surface wipe sampling and building materials sampling and associated analyses for PCB's, have been performed at the school. Data has been presented in the reports previously submitted to the USEPA and provided as public information on the WRSD website. Based on conditional approvals by USEPA, PCB mitigation activities including the removal and/or disposal of PCB fluorescent light ballasts and stained light fixtures, PCB electrical capacitors associated with classroom unit ventilators, *PCB Bulk Product Waste* (window and joint caulking), *PCB Remediation Waste* (building substrate materials and soil) and the thorough cleaning of classrooms, furniture, hallways, etc. associated with the older portion of the school constructed circa 1962, were performed.

The PCB mitigation activity which has been completed that requires long term monitoring and maintenance includes the encapsulation of identified PCB contaminated porous surfaces with two layers of an epoxy coating. The subject epoxy coatings that have been applied over PCB-contaminated porous surfaces at the school consist of:

Interior:

- 100-Wing Classrooms: 100, 102, 104, 106, 108 & 110 – A six-inch border of two layers of Sikagard® 62 epoxy coating were applied to the surface of the concrete block around the windows. An acrylic paint was applied over the coated surfaces for aesthetic purposes (note that only one window per classroom exists in the 100-Wing classrooms);
- 200-Wing Classrooms: 201, 203, 205, 207, 209 & 211 – A six-inch border of two layers of Sikagard® 62 epoxy coating were applied to the surface of the concrete block around and between the windows. An acrylic paint was applied over the coated surfaces of select classrooms for aesthetic purposes (note that two windows per classroom exists in the 100-Wing classrooms);

Exterior:

- 100-Wing Classrooms: 100, 102, 104, 106, 108 & 110 – The entire surface area of the pre-cast concrete columns which surround the windows, entire surface area of the window sills and a 4-inch border below the window sills, 4-inch border above the windows, six-inch border on the masonry brick façade existing adjacent to the outside edge of the pre-cast concrete window column pillars (adjacent to the former PCB vertical caulk joint) and an 8-inch border surrounding the air intake vents were coated with two layers of Sikagard® 62 epoxy coating.
- 200-Wing Classrooms: 201, 203, 205, 207, 209 & 211 – The entire surface area of the pre-cast concrete columns which surround the windows, entire surface area of the window sills and a 4-inch border below the window sills, 4-inch border above the windows, six-inch border on the masonry brick façade existing adjacent to the outside edge of the pre-cast concrete window column pillars (adjacent to the former PCB vertical caulk joint) and an 8-inch border surrounding the air intake vents were coated with two layers of Sikagard® 62 epoxy coating..

The required long term monitoring includes the collection and analyses of surface wipe samples and indoor air samples and the associated evaluation of the results of the samples. Refer to **Appendix A** for a bulleted timeline of the events that have been conducted at the Thomas Prince School in relation to the assessment and remediation of PCB's and **Appendix B** for photographs of typical epoxy coated porous surfaces existing at the school.

3.0 DESCRIPTION OF MONITORING AND MAINTENANCE ACTIVITIES

This section presents the recommended monitoring and maintenance activities to be conducted at the Thomas Prince School to assess the long-term effectiveness of the Sikagard® 62 epoxy coatings applied to the subject porous surfaces.

3.1 INSPECTION AND MONITORING ACTIVITIES

Initially, the post-PCB mitigation monitoring activities were conducted on a near annual basis during the typical colder times of the year when the building windows were expected to be closed and the heating system in operation (December 23, 2013, November 11, 2014, February 16, 2016 and April 19, 2017). Representative surface wipe samples of interior/exterior epoxy coated porous surfaces related to the 100-Wing and 200-Wing classrooms were collected for laboratory analyses at the typical frequency of approximately 20 samples per event. Representative indoor air samples were collected from the 100-Wing classrooms, the 200-Wing classrooms and Common Area rooms at a minimum frequency of 6 samples (plus duplicate) per event. The results of these previous indoor air sampling and surface wipe events are summarized in the attached **Tables 1** & **2**, respectively. In addition, a visual inspection of the epoxy encapsulated porous surfaces to evaluate its integrity was also conducted during these events. The results of these initial Monitoring and Maintenance activities are presented in the correspondence titled *Long Term Monitoring and Maintenance Report, 2012-present, dated September 30, 2017*, previously submitted to EPA.

The frequency of future recommended long term Monitoring and Maintenance activities is presented below. These frequencies may be modified over time based on results to be obtained or other factors. Such a modification request shall be made either in the report prepared to document the results of the monitoring and maintenance activities or under separate cover. In addition, indoor air sampling shall be performed in conjunction with the surface sampling/inspections. The inspection findings, including photographs of any compromised coated surfaces, shall be documented on an inspection form and maintenance log similar to that as presented in **Appendix C**.

Note that results from the initial post-mitigation monitoring and maintenance events were made available to the general public via postings of this information on the WRSD PCB website at http://www.wrsd.net/pcbinfo.cfm.

3.1.1 Encapsulated Surface Inspection Criteria and Frequency

Future required Long Term Monitoring and Maintenance inspections shall consist of visual assessments of the of the encapsulated surfaces to determine if the surfaces have been compromised. The visual aspects to be considered during the inspections shall include the following:

- Physical condition of the coatings and new caulking (cracking, flaking, chipping, peeling, etc.);
- The presence of decorations or other items that are adhered to the coated surfaces; and,
- Other signs of disturbance of the coatings or new caulking.

The inspections shall be conducted via a close visual observation of the encapsulated areas. The epoxy coated porous surfaces to be inspected shall include:

- Epoxy coated substrate material (i.e. interior concrete block and exterior concrete pillars, window sills and brick façade) that were formerly in direct contact with the former PCB window caulking and PCB expansion joint caulking;

- Epoxy coated substrate material (i.e. brick façade) immediately surrounding the exterior air intake vents for the 100-Wing and 200-Wing classrooms that was formerly in direct contact with the former PCB joint caulking;

Note that the interior porous substrate materials immediately surrounding the former framed clerestory window units of the cafeteria and kitchen were found **not to contain** concentrations of PCB's that were greater than (>) 1 mg/Kg. However, as a conservative measure, a two-layer Sikagard® 62 epoxy coating was applied over the interior porous surfaces that were formerly in contact with the former window caulking. Wipe sampling of the interior epoxy coated surfaces surrounding the clerestory windows is not recommended as part of this MMIP.

In addition, the exterior porous substrate materials immediately surrounding the former framed clerestory window units of the **kitchen** were also found **not to contain** concentrations of PCB's that were greater than (>) 1 mg/Kg. Of 13 samples collected from the exterior porous substrate material immediately surrounding the former framed clerestory window units of the **cafeteria**, only one sample was found to contain a PCB concentration above 1 mg/Kg. Two layers of a Sikagard® 62 epoxy coating were applied to the exterior porous surfaces that were formerly in contact with the former window caulking of the cafeteria and kitchen clerestory windows. In the opinion of ATC, since access to the roof is restricted, the potential for exposure to PCB's from these exterior porous surfaces is extremely low. Thus, the wipe sampling of the exterior epoxy coated surfaces surrounding the clerestory windows is not recommended as part of this MMIP.

3.1.2 Encapsulated Surface Sample Collection Protocols, Analytical Criteria and Frequency

To verify the long term effectiveness of the Sikagard® 62 epoxy coatings at eliminating the potential exposure pathways to PCBs which remain in the substrate materials, it is required by USEPA conditional approval that surface wipe samples be collected and analyzed for PCBs. The sample collection protocols, analytical methods, quantities, locations and sampling frequencies are summarized below:

Wipe Sample Collection Protocols and Analytical Criteria

- Wipe samples are to be collected in general conformance with the standard wipe test method as described in *40 CFR 761.123* and the document entitled *Wipe Sampling and Double Wash/Rinse Cleanup as recommended by the Environmental Protection Agency PCB Spill Cleanup Policy, USEPA, June 23, 1987 (revised and clarified on April 18, 1991).* At each sample location, a 2-inch square gauze pad, doused with hexane, will be wiped across a 100 square centimeter template area to collect a surface sample;

- All samples will be transported to certified analytical laboratory, under standard Chain of Custody procedures, for extraction by USEPA Method 3540C (Soxhlet extraction) and analyzed for PCBs by USEPA Method 8082. The laboratory reporting limit is to be less than (<) 1 ug/100cm^2; and
- As part of the QA/QC procedures associated with the sample collection procedures, in addition to the primary samples to be collected, it is recommended that a duplicate sample be collected at a frequency of one per 20 primary samples and that a field blank sample be collected and the samples be submitted to the laboratory and analyzed as indicated above.
- It is recommended that each sampling round be performed on a near annual basis, in conjunction with required indoor air sampling, during a different season of the year such that all four seasons will be represented by four concurrent sampling events. This is recommended to evaluate potential temporal variability.

Wipe Sample Collection Locations, Quantities and Frequencies

It is recommended that surface wipe samples be collected from the following locations at the suggested quantities and frequencies:

- A total of **six** wipe samples are recommended to be collected on a near annual basis from the interior epoxy coated substrate material (i.e. interior concrete block) that was formerly in direct contact with the former PCB window caulking in the 100-Wing and 200-Wing classrooms. The sample locations include classrooms 100, 102, 104, 106, 108, 110, 201, 203, 205, 207, 209 & 211 from which wipe samples will be collected from 50% of the classrooms during each event such that each classroom is sampled over the course of two years. The sampling locations from the epoxy coated surfaces within the classrooms will be random;

- A total of six wipe samples are recommended to be collected on a near annual basis from the exterior epoxy coated substrate materials (i.e. exterior concrete pillars, window sills and brick facade) that were formerly in direct contact with the former PCB window caulking, expansion joint caulking and/or air intake vent caulking for the 100-Wing and 200-Wing classrooms. The sample locations include those epoxy coated porous surfaces exterior to classrooms 100, 102, 104, 106, 108, 110, 201, 203, 205, 207, 209 & 211. During each sampling event it is recommended that three wipe samples be collected from those exterior areas associated with the 100-Wing classrooms and three wipe samples be collected from those exterior areas associated with the 200-Wing classrooms. The sampling locations from the exterior epoxy coated surfaces will be random.

3.1.3 Indoor Air Sample Collection Protocols, Analytical Criteria and Frequency

To further evaluate the effectiveness of the remedial activities that have been taken to mitigate PCB's from the interior areas of the school in limiting potential exposure to PCB's by occupants of the school, it is required by USEPA conditional approval that indoor air sampling and analysis for PCB's be performed. The indoor air sample collection protocols, analytical methods, sample quantities, locations and sampling frequencies are summarized below:

Indoor Air Sample Collection Protocols and Analytical Criteria

- Indoor air samples will be collected in general conformance with the USEPA required indoor air sampling Method TO-10A[1] and analyzed via USEPA Method 680 for PCB Homologs by Gas Chromatography with Mass Spectrometry Detection (GC/MS). The sampling will utilize calibrated low flow air sampling pumps with laboratory supplied polyurethane foam sample media;
- Sufficient sample volumes will be collected to provide a minimum laboratory reporting limit of less than (<) 50 ng/m^3; and,
- As part of the QA/QC procedures associated with the sample collection procedures, in addition to the primary samples to be collected, it is recommended that a duplicate sample be collected at a frequency of one sample per each alternating sampling event and that a field blank sample be collected during each sampling event. The samples will be submitted for analyses as indicated above.

Indoor Air Sample Collection Locations, Quantities and Frequencies

It is recommended that indoor air samples be collected from the following locations at the suggested quantities and frequencies:

- A total of **six** indoor air samples are recommended to be collected on a near annual basis. The sample locations are to include classrooms 100, 102, 104, 106, 108, 110, 201, 203, 205, 207, 209, 211, the cafeteria, and the library such that each room will be sampled over the course of a three-year period;

- Each sampling round shall be performed during a different season of the year such that all four seasons will be represented by four concurrent sampling events. This is recommended to evaluate potential temporal variability.

3.2 ACTION LEVELS AND ROUTINE MAINTENANCE ACTIVITIES

A combination of visual inspections and laboratory sample results will be used to verify the continued effectiveness of the epoxy coatings in limiting potential direct contact and inhalation exposures. Following receipt of the laboratory analytical results after each monitoring round, the data will be reviewed and compared to the following action levels to determine whether additional monitoring or corrective measures are necessitated.

3.2.1 Epoxy Coated Porous Surfaces of Interior and Exterior Areas
All Areas

- If wipe sample results are less than (**≤**) 1 µg/100 cm^2 – no additional action will be required, monitoring and maintenance will continue in accordance with this plan;

[1] As presented in the document entitled *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition, Compendium Method TO-10A, Determination of Pesticides and Polychlorinated Biphenyls in Ambient Air Using Low Volume Polyurethane Foam (PUF) Sampling Followed by Gas Chromatographic/Multi-Detector Detection (GC/MD). Center for Environmental Research and Development, U.S. Environmental Protection Agency, Cincinnati, Ohio 45268, January, 1999.*

Interior Areas

At interior areas where encapsulate deterioration is observed, the following actions are recommended:

- An additional coating of two layers of Sikagard® 62 epoxy coating be applied to the area of concern within 30 days of receipt of the analytical results and no follow-up confirmatory wipe sampling will be required.

At interior areas where PCBs are reported at concentrations greater than (>) 1 µg/100 cm^2, the following actions are recommended:

- An additional coating of two layers of Sikagard® 62 epoxy coating be applied to the area(s) of concern within 30 days of receipt of the analytical results. Follow-up confirmatory wipe samples shall be collected within 15 days of re-coating to verify that PCB concentrations have been reduced to less than (<) 1 ug/100cm^2. If analytical results indicate that PCBs remain present at concentrations greater than (>) 1 µg/100 cm^2 following re-coating, the Town of Princeton, in conjunction with EPA, will evaluate alternative solutions to attempt to reduce PCB concentrations to levels less than (<) 1 ug/100cm^2.

Exterior Areas

At exterior areas where encapsulate deterioration is observed, the following actions are recommended:

- An additional coating of two layers of Sikagard® 62 epoxy coating be applied to the area of concern within 30 days of receipt of the analytical results and no follow-up confirmatory wipe sampling will be required.

At exterior areas where PCBs are reported at concentrations greater than (>) 1 µg/100 cm^2, the following actions are recommended:

- An additional coating of two layers of Sikagard® 62 epoxy coating shall be applied to the area(s) of concern within 30 days of receipt of the analytical results and follow-up confirmatory wipe samples shall be collected within 15 days of re-coating to verify that PCB concentrations have been reduced to less than (<) 1 ug/100cm^2. If analytical results indicate that PCBs are still present at concentrations greater than (>) 1 µg/100 cm^2 following re-coating, the Town of Princeton, in conjunction with EPA, will evaluate alternative solutions to attempt to reduce PCB concentrations to concentrations less than (<) 1 ug/100cm^2.

3.2.2 Indoor Air Sampling Results

- If indoor air sampling results are less than (≤) 300 ng/m^3 – no additional action will be required and monitoring and maintenance shall continue in accordance with this plan. This action level criteria of less than (≤) 300 ng/m^3 is deemed appropriate since it is less than the current EPA calculated Exposure Level for Evaluating PCB's in School Indoor Air of 300 ng/m^3 for children from 6 to less than (<) 12 years in age;

- If indoor air sampling results are greater than (**>**) 300 ng/m^3 – the room(s) from which the sample was obtained shall be re-sampled along with a duplicate sample. If the sample results remain greater than (>) 300 ng/m^3, the Town of Princeton, in conjunction with EPA, will evaluate/implement alternative solutions to attempt to reduce PCB concentrations.

4.0 REPORTING REQUIREMENTS

4.1 REPORTING

The results of the annual long term monitoring and maintenance activities will be summarized in a letter report to be submitted to EPA within 15 business days of receipt of the surface wipe and indoor air laboratory certificates of analyses. The report shall include tables which present the historical long term monitoring results of wipe sampling and indoor air laboratory analyses, copies of the laboratory analytical results as well as visual inspection forms and maintenance logs. The results shall be submitted to EPA in electronic and hard copy format. The submittal shall include a schedule for maintenance activities to be performed, if required. Documentation of the completion of any required maintenance activities shall be submitted to EPA within 30 days of completion and shall include the results of additional sampling analyses, if required. The results of the long term monitoring and maintenance activities are to be retained by the Town of Princeton for the life of the building.

5.0 COMMUNICATION

The long term monitoring and maintenance results shall be provided to WRSD by the Town of Princeton. The Town of Princeton owns the subject building, however, WRSD occupies the building as an elementary school and operates and utilizes it at their discretion and is also critically involved with any decisions regarding major renovations or repairs. Thus, the Town of Princeton has designated the communications aspect of this plan to the operator and occupant of the building, WRSD. Specifically, the Town of Princeton shall provide the Long Term Monitoring and Maintenance reports (and all other public reports and communications related to this project) to WRSD. WRSD has offered and agreed to post the reports on the WRSD website under the heading *Thomas Prince PCB Information* at http://www.wrsd.net/pcbinfo.cfm. The Principal at Thomas Prince School, or an appropriate designee assigned by the Principal, shall be responsible for communicating the presence of this information to the Site users (e.g. teachers, parents, students, other on-site workers, and interested stakeholders).

6.0 WORKER TRAINING

This section includes information on recommended training for maintenance workers or any other person that may be performing work that could impact the epoxy coating that encapsulates the PCB contaminated substrate material. This applies to the substrate material which is coated with epoxy that immediately surrounds the windows, vertical caulked joints, exterior concrete window columns, and exterior air intake vents associated with the 100-Wing and 200-Wing classrooms at the Thomas Prince School (i.e. classrooms 100, 102, 104, 106, 108, 110, 201, 203, 205, 207, 209 & 211). Prior to initiating any maintenance of the coated surface or other work that could potentially impact the coatings on the interior or exterior surfaces of the subject areas, WRSD personnel shall notify on-site workers of the presence of PCBs in the walls and of the purpose of the coatings. Workers shall be provided with a copy of the MMIP to review. A copy of the MMIP shall be kept at the Thomas Prince School as a reference.

Exposure to potential PCB containing materials can greatly be reduced by implementing some simple Best Management Practices. The Thomas Prince School custodial and teaching staff (as appropriate) have been trained on implementing the following simple, yet effective procedures, to reduce student/staff potential exposure to PCBs. This list has been provided to the Principal at Thomas Prince School for internal reference. The custodial staff have been trained on these pertinent items and have implemented the use of HEPA vacuums and have eliminated the dry mopping method for the subject areas. At a minimum, the following list should be reviewed annually by any personnel that perform duties in the above-noted classrooms and upon new assignment of personnel to the referenced classrooms. The list should be reviewed regularly and updated as necessary. The head custodian, or an appropriate designee assigned by the Principal, shall be responsible for the implementation of the BMP's.

- Any proposed removal or renovation of building materials associated with the above-referenced areas or of any other materials suspected of potentially containing PCB's should be properly evaluated by the Town of Princeton and WRSD prior to performing any such work. If required to be completed, any such activity should be performed by trained personnel.
- Do not apply adhesive (e.g. tape, glue, etc.), hooks, nails, tacks or otherwise affix any item to the interior or exterior epoxy coated surfaces;
- Do not write on the interior or exterior epoxy coated surfaces;
- Do not scrape, gouge or otherwise compromise the epoxy coated surfaces;
- Report the peeling, chipping or other impairment of epoxy coated surfaces to the Principal who will in turn provide information to the Town of Princeton;
- Utilize vacuums with HEPA filters for cleaning (this practice is currently in effect and has been so prior to the discovery of PCBs at the school);
- Avoid dry dusting, dry mopping or dry sweeping. Use wet cloth's or HEPA vacuuming to clean surfaces;
- Clean areas of greater dust accumulation more often. For example, these areas may include window sills, top edges of cork boards or other surfaces which are perpendicular to the floor, floor intake vents for the unit ventilator, corners, hard to reach areas, etc.;

- Maintain proper ventilation. The classroom unit ventilators should be adjusted and maintained for optimum performance and should not be not be "tinkered" with by teaching staff. The storage of materials on top of the unit ventilator vents should be avoided. Filter changes (per manufacturer's recommendations or more frequent if dusty conditions require) and annual removal of dust from the interiors of unit ventilators with a HEPA vacuum should occur;
- Students and faculty should wash hands with soap and water frequently.

7.0 LIMITATIONS

This plan was prepared for the Town of Princeton and WRSD, exclusively. The findings provided by ATC in this plan are based solely on the information obtained from the pertinent investigations that have been performed at the Thomas Prince School. Future investigations or information that was not available to ATC at the time of preparation of this plan may result in a modification of this MMIP. This MMIP has been prepared in accordance with generally accepted practices. No warranty, expressed or implied, is made.

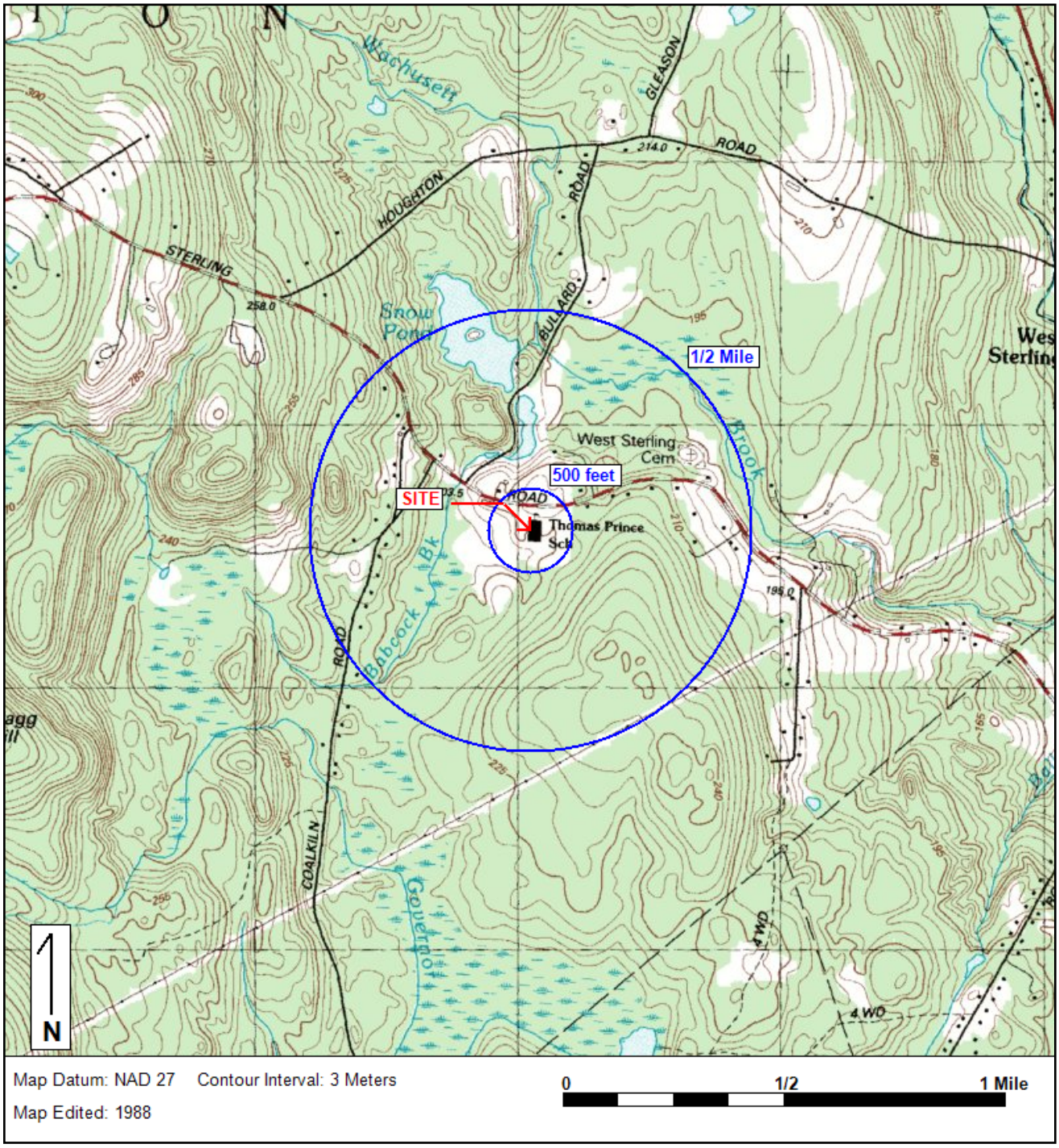
FIGURES

ENVIRONMENTAL • GEOTECHNICAL
BUILDING SCIENCES • MATERIALS TESTING

ATC Group Services LLC
997 Millbury Street, Unit 6
Worcester, MA 01607
Phone 508-756-0151 Fax 508-757-7063
www.atcgroupservices.com

Thomas Prince School
170 Sterling Street
Princeton, MA

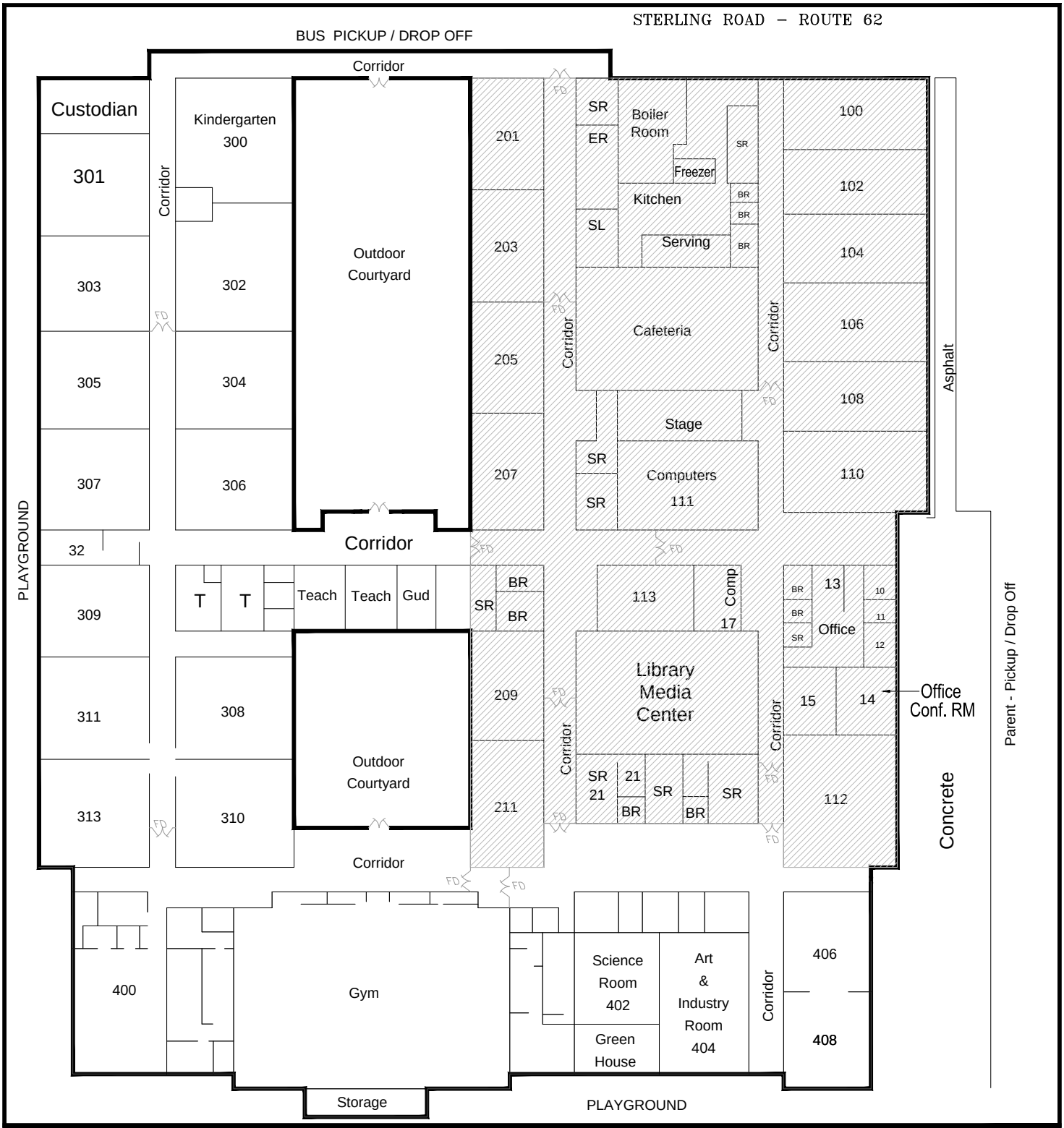
Figure 1: SITE LOCUS



Base Map: U.S. Geological Survey; Quadrangle Location: Sterling, MA

Lat/Lon: 42 26' 33" NORTH, 71 50' 38" WEST - UTM Coordinates: 19 266094.53 EAST / 4702820.5 NORTH

Generated By: Rick Starodoj



Legend

BR - Bathroom
SR - Storage Room
ER - Electrical Room
SL - Staff Lounge
FD - Fire Door

Building Constructed 1962
Un-hatched sections were constructed in 1991

588 Silver Street * Agawam, MA 01001
Phone: 800-789-3530 Fax: 413-789-3530

PROJECT:

Thomas Prince School

170 Sterling Road – Route 62
Princeton, Massachusetts

TITLE:

Room ID Plan

COMPUTER CADFILE : 216630e.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
RAS	SPF/CK	SPF/CK	SPF/CK
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
NTS	9/29/17	216630	2

TABLES

Thomas Prince School
170 Sterling Road
Princeton, Massachusetts

Table 1
INDOOR AIR SAMPLING RESULTS
USEPA Method TO-10A

Indoor Air
USEPA Method TO-10A/680/8082
Polychlorinated Biphenyls

Sample Location	Sampling Date	Method		Notes	Sample Designation	Total Aroclor	Total Homolog's	Aroclor (EPA Method 8082)				Homolog's (EPA Method 680)									
		Aroclor (8082)	Homolog's (680)					1221	1242	1248	1254	Monochlorobiphenyl	Dichlorobiphenyl	Trichlorobiphenyl	Tetrachlorobiphenyl	Pentachlorobiphenyl	Hexachlorobiphenyl	Heptachlorobiphenyl	Octachlorobiphenyl	Nonachlorobiphenyl	Decachlorobiphenyl
Classroom 100	8/20/2011	x	x		RM 100	288	54.2	174	114	< 47.8	< 47.8	< 12	39.2	15	< 23.9	< 23.9	< 23.9	< 35.9	< 35.9	< 59.8	< 59.8
	3/22/2012		x				21.83					<2.47	**17.5**	**4.33**	<4.94	<4.94	<4.94	<7.40	<7.40	<12.3	<12.3
	12/28/2012		x				ND					<2.17	<2.17	<2.17	<4.33	<4.33	<4.33	<6.49	<6.49	<10.8	<10.8
	12/23/2013		x				ND					<2.45	<2.45	<2.45	<4.89	<4.89	<4.89	<7.34	<7.34	<12.2	<12.2
	4/19/2017		x				4.98					<4.61	<4.61	<4.61	<4.61	**4.98**	<4.61	<4.61	<4.61	<4.61	<4.61
Classroom 102	8/20/2011	x			RM 102	102.7		60.3	42.4	< 48	< 48										
	12/28/2012		x		RM 102		ND					<2.16	<2.16	<2.16	<4.31	<4.31	<4.31	<6.47	<6.47	<10.8	<10.8
	11/11/2014		x		RM 102		ND					<2.50	<2.50	<2.50	<5.01	<5.01	<5.01	<7.51	<7.51	<12.5	<12.5
Classroom 104	8/20/2011	x			RM 104	254		123	131	< 48	< 48										
	12/28/2012		x		RM 104		ND					<2.16	<2.16	<2.16	<4.31	<4.31	<4.31	<6.47	<6.47	<10.8	<10.8
	11/11/2014		x		RM 104		ND					<2.65	<2.65	<2.65	<5.30	<5.30	<5.30	<7.95	<7.95	<13.3	<13.3
	4/19/2017		x		RM 104		ND					<4.56	<4.56	<4.56	<4.56	<4.56	<4.56	<4.56	<4.56	<4.56	<4.56
Classroom 106	8/20/2011	x			RM 106	534		317	217	< 47.9	< 47.9										
	9/22/2011		x		RM 106		72.52					< 2.46	**5.52**	**24.6**	**25.6**	**16.8**	< 4.93	< 7.39	< 7.39	< 12.3	< 12.3
	3/22/2012		x		RM 106		55.4					<2.47	**26.7**	**28.7**	<4.94	<4.94	<4.94	<7.41	<7.41	<12.4	<12.4
	12/28/2012		x		RM 106		ND					<2.14	<2.14	<2.14	<4.27	<4.27	<4.27	<6.41	<6.41	<10.7	<10.7
	12/23/2013		x		RM 106		ND					<2.40	<2.40	<2.40	<4.80	<4.80	<4.80	<7.20	<7.20	<12.0	<12.0
	2/16/2016		x		RM 108 "B"		ND					<2.22	<2.22	<2.22	<4.80	<4.44	<4.44	<6.66	<6.66	<11.1	<11.1
Classroom 108	8/20/2011	x			RM 108	360		196	164	< 48.7	< 48.7										
	8/20/2011	x			RM 108A	171.6		82	89.6	< 49.9	< 49.9										
	11/8/2011		x		RM 108		25.6					<2.5	**13.7**	**11.9**	<5	<5	<5	<7.5	<7.5	<12.5	<12.5
	12/28/2012		x		RM 108		ND					<2.37	<2.37	<2.37	<4.74	<4.74	<4.74	<7.11	<7.11	<11.8	<11.8
	2/16/2016		x		RM 108 "A"		ND					<2.22	<2.22	<2.22	<4.44	<4.44	<4.44	<6.66	<6.66	<11.1	<11.1
Classroom 110	8/20/2011	x			RM 110	191.9		104	87.9	< 49.2	< 49.2										
	12/28/2012		x		RM 110		ND					<2.43	<2.43	<2.43	<4.85	<4.85	<4.85	<7.28	<7.28	<12.1	<12.1
	12/23/2013		x		RM 110		ND					<2.43	<2.43	<2.43	<4.87	<4.87	<4.87	<7.30	<7.30	<12.2	<12.2
	4/19/2017		x		RM 110		ND					<4.53	<4.53	<4.53	<4.53	<4.53	<4.53	<4.53	<4.53	<4.53	<4.53

Thomas Prince School
170 Sterling Road
Princeton, Massachusetts

Table 1
INDOOR AIR SAMPLING RESULTS
USEPA Method TO-10A

Indoor Air
USEPA Method TO-10A/680/8082
Polychlorinated Biphenyls

Sample Location	Sampling Date	Method: Aroclor (8082)	Method: Homolog's (680)	Notes	Sample Designation	Total Aroclor	Total Homolog's	Aroclor (EPA Method 8082): 1221	1242	1248	1254	Homolog's (EPA Method 680): Monochlorobiphenyl	Dichlorobiphenyl	Trichlorobiphenyl	Tetrachlorobiphenyl	Pentachlorobiphenyl	Hexachlorobiphenyl	Heptachlorobiphenyl	Octachlorobiphenyl	Nonachlorobiphenyl	Decachlorobiphenyl
Classroom 201	**8/1/2011**	x				**322**		110	<48.7	92	120										
	3/22/2012		x				**171.47**					<2.46	**7.07**	**19.8**	**65.6**	**79**	<4.92	<7.38	<7.38	<12.3	<12.3
	12/28/2012		x		**RM 201**		**ND**					<2.36	<2.36	<2.36	<4.72	<4.72	<4.72	<7.08	<7.08	<11.8	<11.8
	12/23/2013		x				**ND**					<2.42	<2.42	<2.42	<4.83	<4.83	<4.83	<7.25	<7.25	<12.1	<12.1
	2/16/2016		x				**ND**					<2.36	<2.36	<2.36	<4.72	<4.72	<4.72	<7.08	<7.08	<11.8	<11.8
	4/19/2017		x				**ND**					<4.60	<4.60	<4.60	<4.60	<4.60	<4.60	<4.60	<4.60	<4.60	<4.60
Classroom 203	**8/1/2011**	x				**318.9**		131	<48.9	72.9	115										
	3/22/2012		x		**RM 203**		**131.9**					<2.50	**26.1**	**20.7**	**48.5**	**36.6**	<4.99	<7.49	<7.49	<12.5	<12.5
	12/28/2012		x				**ND**					<2.32	<2.32	<2.32	<4.63	<4.63	<4.63	<6.94	<6.94	<11.6	<11.6
	11/11/2014		x				**ND**					<2.48	<2.48	<2.48	<4.96	<4.96	<4.96	<7.43	<7.43	<12.4	<12.4
Classroom 205	**8/1/2011**		x			**661.2**		84.2	<46.9	224	353										
	3/22/2012		x				**220.59**					<2.44	**5.59**	<2.44	**102**	**113**	<4.88	<7.31	<7.31	<12.2	<12.2
	12/28/2012		x		**205**		**ND**					<2.35	<2.35	<2.35	<4.70	<4.70	<4.70	<7.04	<7.04	<11.7	<11.7
	12/23/2013		x				**ND**					<2.47	<2.47	<2.47	<4.94	<4.94	<4.94	<7.40	<7.40	<12.3	<12.3
	2/16/2016		x				**ND**					<2.35	<2.35	<2.35	<4.70	<4.70	<4.70	<7.04	<7.04	<11.7	<11.7
	4/19/2017		x				**ND**					<2.35	<2.35	<2.35	<4.70	<4.70	<4.70	<7.04	<7.04	<11.7	<11.7
	4/19/2017		x	1	**205 DUP**		**19.18**					<4.62	<4.62	<4.62	**8.23**	**10.95**	<4.62	<4.62	<4.62	<4.62	<4.62
Classroom 207	**8/1/2011**	x				**591**		218	<46.8	149	224										
	3/22/2012		x		**RM 207**		**134.11**					<2.49	**6.71**	**15.4**	**71.3**	**40.7**	<4.98	<7.47	<7.47	<12.4	<12.4
	12/28/2012		x				**ND**					<2.32	<2.32	<2.32	<4.63	<4.63	<4.63	<6.94	<6.94	<11.6	<11.6
	11/11/2014		x				**ND**					<2.47	<2.47	<2.47	<4.94	<4.94	<4.94	<7.41	<7.41	<12.3	<12.3
	11/11/2014		x	1	**RM 207 DUP**		**ND**					<2.54	<2.54	<2.54	<5.07	<5.07	<5.07	<7.61	<7.61	<12.7	<12.7
Classroom 209	**8/1/2011**	x			**209**	**1021**		249	<41.7	266	506										
	9/22/2011		x		**RM 209**		**900.87**					**5.87**	**12**	**77.1**	**250**	**487**	**68.9**	< 7.45	< 7.45	< 12.4	< 12.4
	11/8/2011		x		**RM 209**		**179.01**					**3.3**	**6.55**	**20.8**	**48.2**	**94.6**	**5.56**	<7.5	<7.5	<12.5	<12.5
	3/22/2012		x		**RM 209**		**311.8**					<2.44	**15.6**	**23.2**	**88.6**	**168**	**16.4**	<7.31	<7.31	<12.2	<12.2
	3/22/2012		x	1	**RM 209 DUP**		**248.73**					<2.45	**11.0**	**7.23**	**84.5**	**146**	<4.9	<7.35	<7.35	<12.2	<12.2
	12/28/2012		x		**RM 209**		**ND**					<2.30	<2.30	<2.30	<4.61	<4.61	<4.61	<6.91	<6.91	<11.5	<11.5
	12/28/2012		x	1	**RM 209 DUPLICATE**		**ND**					<2.30	<2.30	<2.30	<4.61	<4.61	<4.61	<6.91	<6.91	<11.5	<11.5
	12/23/2013		x		**RM 209**		**ND**					<2.40	<2.40	<2.40	<4.81	<4.81	<4.81	<7.21	<7.21	<12.0	<12.0
	12/23/2013		x	1	**RM 209 DUPLICATE**		**ND**					<2.41	<2.41	<2.41	<4.81	<4.81	<4.81	<7.22	<7.22	<12.0	<12.0
	2/16/2016		x		**RM 209**		**ND**					<2.37	<2.37	<2.37	<4.74	<4.74	<4.74	<7.10	<7.10	<11.8	<11.8
	2/16/2016		x	1	**RM 209 DUPLICATE**		**ND**					<2.44	<2.44	<2.44	<4.89	<4.89	<4.89	<7.33	<7.33	<12.2	<12.2
Classroom 211	**8/1/2011**	x				**396.3**		187	<50.2	74.3	135										
	3/22/2012		x				**78.35**					<2.43	**21.3**	**8.25**	**25.0**	**23.8**	<4.86	<7.29	<7.29	<12.2	<12.2
	12/28/2012		x		**211**		**ND**					<2.28	<2.28	<2.28	<4.57	<4.57	<4.57	<6.85	<6.85	<11.4	<11.4
	11/11/2014		x				**ND**					<2.46	<2.46	<2.46	<4.92	<4.92	<4.92	<7.38	<7.38	<12.3	<12.3
	4/19/2017		x				**12.38**					<4.65	<4.65	<4.65	<4.65	**12.38**	<4.65	<4.65	<4.65	<4.65	<4.65

Thomas Prince School
170 Sterling Road
Princeton, Massachusetts

Table 1
INDOOR AIR SAMPLING RESULTS
USEPA Method TO-10A

Indoor Air
USEPA Method TO-10A/680/8082
Polychlorinated Biphenyls

Sample Location	Sampling Date	Method		Notes	Sample Designation	Total Aroclor	Total Homolog's	Aroclor (EPA Method 8082)				Homolog's (EPA Method 680)									
		Aroclor (8082)	Homolog's (680)					1221	1242	1248	1254	Monochlorobiphenyl	Dichlorobiphenyl	Trichlorobiphenyl	Tetrachlorobiphenyl	Pentachlorobiphenyl	Hexachlorobiphenyl	Heptachlorobiphenyl	Octachlorobiphenyl	Nonachlorobiphenyl	Decachlorobiphenyl
Cafeteria	8/20/2011	x			CAF/AUD A	169.1		104	65.1	< 44.3	< 44.3										
	8/20/2011	x			CAF/AUD B	197.3		119	78.3	< 48.4	< 48.4										
	8/20/2011	x		1	CAF/AUD DUP	197.7		121	76.7	< 48.4	< 48.4										
	9/22/2011		x		CAF/AUD		6.28					< 2.51	< 2.51	**6.28**	< 5.01	< 5.01	< 5.01	< 7.52	< 7.52	< 12.5	< 12.5
	9/22/2011		x	1	CAF/AUD DUP		11.8					< 2.4	< 2.4	**5.98**	**5.82**	< 4.81	< 4.81	< 7.21	< 7.21	< 12	< 12
	3/22/2012		x		Cafeteria		ND					<2.48	<2.48	<2.48	<4.95	<4.95	<4.95	<7.43	<7.43	<12.4	<12.4
	12/23/2013		x		Cafeteria		ND					<2.51	<2.51	<2.51	<5.03	<5.03	<5.03	<7.54	<7.54	<12.6	<12.6
	11/11/2014		x		RM-Caf		ND					<2.47	<2.47	<2.47	<4.94	<4.94	<4.94	<7.40	<7.40	<12.3	<12.3
	2/16/2016		x		Cafeteria		ND					<2.43	<2.43	<2.43	<4.87	<4.87	<4.87	<7.30	<7.30	<12.22	<12.22
	4/19/2017		x		Cafeteria		ND					<4.55	<4.55	<4.55	<4.55	<4.55	<4.55	<4.55	<4.55	<4.55	<4.55
Kitchen	8/20/2011	x			KITCHEN	146.9		88.7	58.2	< 47.9	< 47.9										
	9/22/2011		x		KITCHEN		12.07					**3.27**	< 2.47	**2.58**	**6.22**	< 4.95	< 4.95	< 7.42	< 7.42	< 12.3	< 12.3
	3/22/2012		x		KITCHEN		5.39					<2.41	**5.39**	<2.41	<4.82	<4.82	<4.82	<7.23	<7.23	<12.0	<12.0
Library	8/20/2011	x			LIBRARY A	144.2		80.8	63.4	< 47.5	< 47.5										
	8/20/2011	x			LIBRARY B	158.5		88.2	70.3	< 49.7	< 49.7										
	9/22/2011		x		LIBRARY		18.64					< 2.44	**3.04**	**15.6**	< 4.88	< 4.88	< 4.88	< 7.32	< 7.32	< 12.2	< 12.2
	3/22/2012		x		LIBRARY		3.86					<2.48	<2.48	**3.86**	<4.96	<4.96	<4.96	<7.44	<7.44	<12.4	<12.4
	12/23/2013		x		LIBRARY		ND					<2.44	<2.44	<2.44	<4.88	<4.88	<4.88	<7.31	<7.31	<12.2	<12.2
Computer Lab 111	8/20/2011	x			RM 111	155.7		94.8	60.9	< 49.6	< 49.6										
	9/22/2011		x		RM 111		23.29					**8.69**	**4.17**	**3.91**	**6.52**	< 4.97	< 4.97	< 7.45	< 7.45	< 12.4	< 12.4
Home Economics 112	8/20/2011	x	x		RM 112	24.8	ND	24.8	<48.9	< 48.9	< 48.9	< 12.2	< 12.2	< 12.2	< 24.4	< 24.4	< 24.4	< 36.7	< 36.7	< 61.1	< 61.1
	8/20/2011	x		1	RM 112 (DUP)	ND		<66.9	<66.9	< 66.9	< 66.9										
Off Library 113	8/20/2011	x			RM 113	140.3		87.4	52.9	< 50.3	< 50.3										
	9/22/2011		x		RM 113		14.74					< 2.46	2.92	6.72	5.1	< 4.93	< 4.93	< 7.39	< 7.39	< 12.3	< 12.3
Office Common Area 13	8/20/2011	x	x		RM 13	148.6	13.3	95.7	52.9	< 49.3	< 49.3	< 12.3	**13.3**	< 12.3	< 24.6	< 24.6	< 24.6	< 37	< 37	< 61.6	< 61.6
	9/22/2011		x		RM 13		4.98					< 2.45	< 2.45	4.98	< 4.91	< 4.91	< 4.91	< 7.36	< 7.36	< 12.3	< 12.3
Stage Area	8/20/2011	x			STAGE	144.3		75.5	68.8	< 48.8	< 48.8										
Staff Lounge -- Off Kitchen	8/20/2011	x			T LOUNGE	109.5		66.6	42.9	< 48.4	< 48.4										
Electrical Room	8/20/2011	x			ELEC ROOM	93.5		48.4	45.1	< 48.1	< 48.1										
100 Corridor North	8/20/2011	x			100 COR A	289		170	119	< 47.7	< 47.7										
	9/22/2011		x		100 COR N		64.33					**4.53**	**17.9**	**18**	**10.9**	**13**	< 4.93	< 7.4	< 7.4	< 12.3	< 12.3
100 Corridor South	8/20/2011	x			100 COR B	155.5		94.2	61.3	< 49.6	< 49.6										
	9/22/2011		x		100 COR S		29.31					< 2.48	**11.8**	**10.1**	**7.41**	< 4.96	< 4.96	< 7.44	< 7.44	< 12.4	< 12.4
Central Corridor West	8/20/2011	x			MID COR A	ND		< 49	< 49	< 49	< 49										
	9/22/2011		x		CENTRAL COR MID		41.8					**6.24**	**3.71**	**7.22**	**5.13**	**19.5**	< 4.93	< 7.4	< 7.4	< 12.3	< 12.3
Central Corridor East	8/20/2011	x			MID COR B	170.5		103	67.5	< 49.9	< 49.9										
	9/22/2011		x		CENTRAL COR E		10.6					**3.95**	< 2.52	**6.65**	< 5.03	< 5.03	< 5.03	< 7.55	< 7.55	< 12.6	< 12.6
200 Corridor North	8/20/2011	x			200 COR A	123		70.8	52.2	< 50.1	< 50.1										

Thomas Prince School
170 Sterling Road
Princeton, Massachusetts

Table 1
INDOOR AIR SAMPLING RESULTS
USEPA Method TO-10A

Indoor Air
USEPA Method TO-10A/680/8082
Polychlorinated Biphenyls

Sample Location	Sampling Date	Method: Aroclor (8082)	Method: Homolog's (680)	Notes	Sample Designation	Total Aroclor	Total Homolog's	Aroclor (EPA Method 8082): 1221	1242	1248	1254	Homolog's (EPA Method 680): Monochlorobiphenyl	Dichlorobiphenyl	Trichlorobiphenyl	Tetrachlorobiphenyl	Pentachlorobiphenyl	Hexachlorobiphenyl	Heptachlorobiphenyl	Octachlorobiphenyl	Nonachlorobiphenyl	Decachlorobiphenyl
~~200 Corridor North~~	9/22/2011		x		200 COR N		16.34					4.25	2.65	3.01	6.43	< 4.9	< 4.9	< 7.36	< 7.36	< 12.3	< 12.3
200 Corridor South	8/20/2011	x			200 COR B	199		94.9	60.8	< 48.4	43.3										
	9/22/2011		x		200 COR S		34.1					5.59	3.85	6.36	7.8	10.5	< 4.9	< 7.34	< 7.34	< 12.2	< 12.2
Storage Room Opposite 211	8/20/2011	x			RM 21	274.4		121	99.2	< 48.5	54.2										
South Corridor West	8/20/2011	x			SOUTH COR A	38.9		38.9	< 49.2	< 49.2	< 49.2										
South Corridor East	8/20/2011	x			SOUTH COR B	35.2		35.2	< 49.4	< 49.4	< 49.4										
Kindergarten	8/20/2011	x	x		RM 300	ND	ND	< 50.1	< 50.1	< 50.1	< 50.1	< 12.5	< 12.5	< 12.5	< 25.1	< 25.1	< 25.1	< 37.6	< 37.6	< 62.6	< 62.6
		x	x		RM 302	20.1	ND	20.1	< 49.5	< 49.5	< 49.5	< 12.4	< 12.4	< 12.4	< 24.8	< 24.8	< 24.8	< 37.1	< 37.1	< 61.9	< 61.9
		x			RM 302 DUP	33.9		33.9	< 48.5	< 48.5	< 48.5										
300 Corridor North	8/20/2011	x			300 COR A	ND		< 49.7	< 49.7	< 49.7	< 49.7										
300 Corridor South	8/20/2011	x			300 COR B	ND		<49.9	< 49.9	< 49.9	< 49.9										
North Corridor West	8/20/2011	x			ENT COR B	22.3		22.3	< 50.1	< 50.1	< 50.1										
North Corridor East	8/20/2011	x			ENT COR A	ND		<50.3	< 50.3	< 50.3	< 50.3										
Classroom 303	8/20/2011	x	x		RM 303	20.8	ND	20.8	< 49.8	< 49.8	< 49.8	< 12.4	< 12.4	< 12.4	< 24.9	< 24.9	< 24.9	< 37.3	< 37.3	< 62.2	< 62.2
Classroom 308	8/20/2011	x	x		RM 308	ND	ND	< 49	< 49	< 49	< 49	< 12.3	< 12.3	< 12.3	< 24.5	< 24.5	< 24.5	< 36.8	< 36.8	< 61.3	< 61.3
Gymnasium West	8/20/2011	x			GYM A	30.5		30.5	< 48.4	< 48.4	< 48.4										
Gymnasium East	8/20/2011	x	x		GYM B	37.1	ND	37.1	< 48.9	< 48.9	< 48.9	< 12.2	< 12.2	< 12.2	< 24.5	< 24.5	< 24.5	< 36.7	< 36.7	< 61.2	< 61.2
Science Room	8/20/2011	x	x		RM 402	ND	ND	< 50.5	< 50.5	< 50.5	< 50.5	< 12.6	< 12.6	< 12.6	< 25.2	< 25.2	< 25.2	< 37.8	< 37.8	< 63.1	< 63.1
Art & Industry Room	8/20/2011	x	x		RM 404	ND	ND	< 48.7	< 48.7	< 48.7	< 48.7	< 12.2	< 12.2	< 12.2	< 24.4	< 24.4	< 24.4	< 36.5	< 36.5	< 60.9	< 60.9
Outside (NW Cnr. of Bldg.)	8/20/2011	x			OUTSIDE A	ND		< 51.7	< 51.7	< 51.7	< 51.7										
Outside (S. Courtyard)	8/20/2011	x			OUTSIDE B	ND		< 48.6	< 48.6	< 48.6	< 48.6										
	9/22/2011		x		OUTSIDE S COURTYARD		ND					< 2.42	< 2.42	< 2.42	< 4.84	< 4.84	< 4.84	< 7.26	< 7.26	< 12.1	< 12.1

Notes:

Concentrations in nanograms (billionth of a gram) per cubic meter (ng/m3).

"<" or "ND" denotes = Not Detected at laboratory reporting limit.

Yellow shading denotes most recent indoor air sampling results

1 = Denotes sample dulicate.

EPA Calculated Exposure Levels for Evaluating PCB's in School Indoor Air (ng/m^3), Health Protective GUIDANCE Values

Age (years)	ng/m^3	
1-<2	100	
2-<3	100	
3-<6	200	
6-<12	300	Elementary School
12-<15	500	Middle School
15-<19	600	High School
19+	500	Adult

08/01/11 - Initial IAS round - limited to 200-wing classrooms

08/20/11 - 2nd IAS round - comprehensive round throughout building

09/22/11 - 3rd IAS round - targeted to show effects of initial "cleaning".

11/08/11 - 4th IAS round - Limited to classrooms 209 & 108.

3/22/12 - 5th IAS Round - Post Mitigation 200-Wing, Cafeteria & Kitchen

12/28/12 - 6th IAS Round - Post Final Complete Mitigation at school

12/23/13 - 7th IAS Round - 1 year following completed Mitigation

11/11/14 - 8th IAS Round - 2 years following completed Mitigation

2/16/16 - 9th IAS Round - 3 years following completed Mitigation

4/19/17 - 10th IAS Round - 4 years following completed Mitigation

Post Abatement Indoor Air Sample Results - Blue Highlight

Table 2
EPOXY COATED SURFACES
WIPE SAMPLE RESULTS

SAMPLE ID	Date	Aroclor	Concentration ug/100cm^2	Notes	SAMPLE LOCATION and COMMENTS
CLASSROOM 100					
INTERIOR					
100I-B	12/28/2012		<0.20		Interior, back counter, E wall, adjacent to sink
100I-ECA	12/28/2012		<0.20		Interior, perpendicular face, 3 blocks up on N side
100 Int	12/23/2013	1254	0.202		2nd block from bottom, S side of window, inside block perpendicular to window
100 Ext	12/23/2013		<0.1		North side, center column, 7 feet high - Exterior
100 Int	11/11/2014		<0.5		2nd block up, N Side
100 Int	2/16/2016		<0.1		5th block up from sill, N, Corner
100 Int	4/19/2017		<0.2		6th block up from sill, S of window
EXTERIOR					
100E-ECCCC	12/28/2012		<0.20		Exterior, S of window, perp face, mid level where two window panes meet
100/102 Ext	4/19/2017	1254	**4.47**		Between windows on concrete column, 5' from ground
100/102 ext A	7/27/2017	1254	**2.98**		Between windows on concrete column, 5' from ground - E exposed face
100/102 ext B	7/27/2017	1254	**35.6**		Between windows on concrete column, 3' from ground - E exposed face
100/102 ext C	7/27/2017	1254	**3.35**		Between windows on concrete column, 7' from ground - E exposed face
100/102 ext D	7/27/2017	1254	<0.2		Between windows, N side of S concrete column, 5' from ground
100/102 ext E	7/27/2017	1254	<0.2		N concrete column ,S side, 5' from ground
100/102 ext F	7/27/2017	1254	<0.2		S concrete column, N side, 5' from ground
100/102 Ext B'	8/31/2017	1254	0.25		Between windows on concrete column, 3' from ground - E exposed face
CLASSROOM 102					
INTERIOR					
102I-ECA	12/28/2012		<0.20		Interior, perpendicular face, 4 blocks up on N side
102A Int	1/24/2014		<0.1		5th/6th block up from bottom, perpendicular to window - north
102B Int	1/24/2014		<0.2		5th/6th block up from bottom, perpendicular to window - south
102 Int	11/11/2014		<0.5		2nd block up, S Side
102 Int	2/16/2016		<0.1		3rd block up from sill, N, Corner
102 Int	4/19/2017		<0.2		3rd block up from sill, S of window
EXTERIOR					
102E-ECBr	12/28/2012		<0.20		Exterior, S of window on brick, opposite divide in window panes
102 Ext	11/11/2014		<0.5		North side of S column at lower end of lower window
102 Ext	2/16/2016		<0.1		S most concrete pillar, S side, 4'10" above grade

Table 2
EPOXY COATED SURFACES
WIPE SAMPLE RESULTS

SAMPLE ID	Date	Aroclor	Concentration ug/100cm^2	Notes	SAMPLE LOCATION and COMMENTS
CLASSROOM 104					
INTERIOR					
104I-ECA	12/28/2012		<0.20		Interior, perpendicular face, 4 blocks up on N side
104A Int	1/24/2014		<0.1		3rd/4th block up from bottom, perpendicular to window - north
104B Int	1/24/2014		<0.2		3rd/4th block up from bottom, perpendicular to window - south
104 Int	11/11/2014		<0.5		4th block up adj to window, north side
104 Int	2/16/2016		<0.1		2nd block up from sill, N, Corner
104 Int	4/19/2017		<0.2		4th block up from sill, N of window
EXTERIOR					
104E-ECBr	12/28/2012		<0.20		Exterior, N side of concrete column, opposite divide of window panes
104 Ext	11/11/2014		<0.5		S side of N column, mid lower window
104 Ext	4/19/2017		<0.2		S concrete column, N side, 5' from ground
CLASSROOM 106					
INTERIOR					
106I-ECA	12/28/2012		<0.20		Interior, perpendicular face, 5 blocks up on N side
106I-B	12/28/2012		<0.20		Interior, back counter, E wall, adjacent to sink
106 Int	12/23/2013	1254	0.150		3rd block from bottom, S side of window, inside block perpendicular to window
106 Int	11/11/2014		<0.5		4th block down
106 Int	2/16/2016		<0.1		3rd block up from sill, S, Corner
106 Int	4/19/2017		<0.2		7th block up from sill, N of window
EXTERIOR					
106E-ECCC	12/28/2012		<0.20		Exterior, N side of concrete column, opposite divide of window panes
106 Ext	12/23/2013		<0.1		South side, center column, 5 feet high
106 Ext	2/16/2016		<0.1		S most concrete pillar, N side, 4'8" above grade

Table 2
EPOXY COATED SURFACES
WIPE SAMPLE RESULTS

SAMPLE ID	Date	Aroclor	Concentration ug/100cm^2	Notes	SAMPLE LOCATION and COMMENTS
CLASSROOM108					
INTERIOR					
108I-ECA	12/28/2012		<0.20		Interior, perpendicular face, 6 blocks up on S side of window
108 Int	12/23/2013	1254	0.653		Bottom block under window, 2nd block from south side
108A Int	1/24/2014		<0.1		Bottom block, 1st from south
108B Int	1/24/2014		<0.2		Bottom block, 3rd from south
108C Int	1/24/2014		<0.1		4th/5th block up from bottom, perpendicular to window - south
108D Int	1/24/2014		<0.2		4th/5th block up from bottom, perpendicular to window - north
108 Int	11/11/2014		<0.5		3rd block up from window sil, north side, adj to window
108 Int	2/16/2016		<0.1		4th block up from sill, N, Corner
108 Int	4/19/2017		<0.2		4th block up from sill, N of window
EXTERIOR					
108E-ECCC	12/28/2012		<0.20		Exterior, S side of window, perpendicular to window sill on concrete column
108 Ext	12/23/2013		<0.1		Bricks # 20-21, north end
108 Ext	11/11/2014		<0.5		S side of S column, mid lower window
108 Ext	2/16/2016		<0.1		N most concrete pillar, N side, 4'5" above grade
CLASSROOM 110					
INTERIOR					
110I-ECA	12/28/2012		<0.20		Interior, perpendicular face, 6 blocks up on S side of window
110I-B	12/28/2012		<0.20		Interior, CB, N wall, 1st block above solid block, S of door, 2nd block in
110 Int	12/23/2013	1248	0.132		3rd block from bottom, N side of window, inside block perpendicular to window
110 Int	11/11/2014		<0.5		3rd block up from window sil, south side of window, adj to window
110 Int	2/16/2016		<0.1		4th block up from sill, S, Corner
110 Int	4/19/2017		<0.2		2nd block up from sill, S of window
EXTERIOR					
110E-ECBr	12/28/2012		<0.20		Exterior, S side of window, 1/2 bt top of window and where window panes meet
110 Ext	12/23/2013		<0.1		North side of southern column
110 Ext	4/19/2017		<0.2		N concrete column, N side, 5' from ground

Table 2
EPOXY COATED SURFACES
WIPE SAMPLE RESULTS

SAMPLE ID	Date	Aroclor	Concentration ug/100cm^2	Notes	SAMPLE LOCATION and COMMENTS
CLASSROOM 201					
INTERIOR					
210 I - ECA	3/22/2012		<0.2		Interior, S side of s window, 3 blocks from bottom - perpendicular
201 I - B	3/22/2012		<0.2		Interior, S end, horizontal counter surface west of sink
201 Int	12/23/2013	1254	**1.21**		First block up from bottom, middle block between windows
201A Int	1/24/2014	1254	0.675		First block up from bottom, middle block between windows
201B Int	1/24/2014	1254	1.01*		First block up from bottom, middle block between windows
201C Int	1/24/2014	1254	0.704		2nd block up from bottom, middle block between windows
201D Int	1/24/2014	1254	0.78		2nd block up from bottom, middle block between windows
201 Int	11/11/2014		<0.5		1st block up from bottom
201 Int	2/16/2016		<0.1		4th block up, Middle - Center of block
201 Int	4/19/2017		<0.2		4th block up, Middle - Center of block
EXTERIOR					
201 E - ECCC	3/22/2012		<0.2		Exterior, N column, north window, 3 ' from ground, perpendicular
201 Ext	12/23/2013	1254	0.182		Exterior Sill
201 Ext	11/11/2014		<0.5		Southern Sill
201 Ext	2/16/2016		<0.1		S window, N Column, S side, 5'
201 Ext	4/19/2017		<0.2		Brick above air intake vent, bricks 3 & 4 from north side of vent
CLASSROOM 203					
INTERIOR					
203 I - ECA	3/22/2012	1254	0.5		Interior, S side of n window, 4 blocks from top perpendicular
203 I - B	3/22/2012		<0.2		Interior, horizonal counter surface to north of window
203 Int	12/23/2013	1254	**1.1**		First block up from bottom, middle block between windows
203A Int	1/24/2014	1254	0.437		First block up from bottom, middle block between windows
203B Int	1/24/2014	1254	0.73		First block up from bottom, middle block between windows
203C Int	1/24/2014	1254	0.772		2nd block up from bottom, middle block between windows
203D Int	1/24/2014	1254	0.68		2nd blockup from bottom, middle block between windows
203 Int	11/11/2014		<0.5		3rd block up from bottom, midddle block between windows
203 Int	2/16/2016		<0.1		2nd block up, Middle - Center of block
203 Int	4/19/2017		<0.2		1st block up, Middle - Center of block
EXTERIOR					
203 E - ECBr	3/22/2012		<0.2		Exterior brick face north of north window, 5' from ground
203 Ext	12/23/2013		<0.1		North side, north column, 2 feet high - Exterior
203 Ext	2/16/2016		<0.1		N window, middle of pebbled sill
203 Ext	4/19/2017		<0.2		S window, N concrete column, S face, 5' from ground

Table 2
EPOXY COATED SURFACES
WIPE SAMPLE RESULTS

SAMPLE ID	Date	Aroclor	Concentration ug/100cm^2	Notes	SAMPLE LOCATION and COMMENTS
CLASSROOM 205					
INTERIOR					
205 I - ECA	3/22/2012		<0.2		Interior, south of north window, 1 block from bottom parallel to window
205 I - B	3/22/2012	1254	0.4		Interior, horizontal counter/UV, center
205 Int	12/23/2013	1254	**1.7**		5th block up from bottom, middle block between windows
205A Int	1/24/2014	1254	**1.7**		4th block up from bottom, middle block between windows
205B Int	1/24/2014	1254	**1.22**		4th block up from bottom, middle block between windows
205C Int	1/24/2014	1254	**1.25**		5th block up from bottom, middle block between windows
205D Int	1/24/2014	1254	**1.75**		5th block up from bottom, middle block between windows
205 E Int	2/24/2014		<0.1		4th block up from bottom, middle block.
205 Int	11/11/2014		<0.5		5th block up from bottom, middle block between windows
205 Int	2/16/2016		<0.1		5th block up, Middle - Center of block
205 Int	4/19/2017		<0.2		2nd block up, Middle - Center of block
EXTERIOR					
205 E - ECPC	3/22/2012		<0.2		Exterior, south window, center of window sill
205 EXT	11/11/2014		<0.5		Column - Middle, north face, at window sill
205 Ext	2/16/2016		<0.1		N Window, S column, N side, 4'8"
205 Ext	4/19/2017		<0.2		S Window, center of pebbled sill, horizontal surface
CLASSROOM 207					
INTERIOR					
207 I - ECA	3/22/2012		<0.2		Interior, n side of s window, 5 blocks from top - perpendicular
207 I - B	3/22/2012		<0.2		Interior, south end, horizontal counter surface west of sink
207 Int	12/23/2013		<0.1		5th block up from bottom, middle block between windows
207 Int	11/11/2014		<0.5		3rd block up from bottom, middle block between windows
207 Int	2/16/2016		<0.1		4th block up Middle - North side of block
207 Int	4/19/2017		<0.2		4th block up Middle - North side of block
EXTERIOR					
207 E - ECBr	3/22/2012		<0.2		Exterior, south window, S side 1st brick
207 Ext	12/23/2013		<0.1		South side, southern most center column, 5.5 feet high - Exterior
207 Ext	11/11/2014		<0.5		Brick at vent on Northern end
207 Ext	2/16/2016		<0.1		N window, south column, outer face, 5'
207 Ext	4/19/2017		<0.2		S window, south concrete column, N side, 5' from ground

Table 2
EPOXY COATED SURFACES
WIPE SAMPLE RESULTS

SAMPLE ID	Date	Aroclor	Concentration ug/100cm^2	Notes	SAMPLE LOCATION and COMMENTS
CLASSROOM 209					
INTERIOR					
209 I - ECA	3/22/2012		<0.2		Interior, north side of north window, 2 blocks from top, parallel to window
209 I - B	3/22/2012	1254	0.38		Interior, horizontal surface, sw corner
209 Int	12/23/2013		<0.1		3rd block up from bottom, middle block between windows
209 Int	11/11/2014		<0.5		2nd block up from bottom, middle block between windows
209 Int	2/16/2016		<0.1		3rd block up Middle - South side of block
209 Int	4/19/2017		<0.2		3rd block up Middle - Center of block
EXTERIOR					
209 E - ECCC	3/22/2012		<0.2		Exterior, N window, north side at 6' perpendicular to window
209 Ext	11/11/2014		<0.5		N face of S column - 5' from ground
209 Ext	2/16/2016		<0.1		S window, S column, S face, 5'
209 Ext	4/19/2017		<0.2		S window, N concrete column, S face, 3' from ground
CLASSROOM 211					
INTERIOR					
211 I - ECA	3/22/2012	1254	0.53		Interior, S side of S window, 1 block from bottom, perpendicular surface
211 I - B	3/22/2012	1254	0.24		Interior, horizontal surface, south end of radiator
211 Int	12/23/2013		<0.1		3rd block up from bottom, middle block between windows
211 Int	11/11/2014		<0.5		4th block up from bottom, middle block between windows
211 Int	2/16/2016		<0.1		4th block up Middle - South side of block
211 Int	4/19/2017		<0.2		7th block up Middle - Center of block
EXTERIOR					
211 E - ECPC	3/22/2012		<0.2		Exterior, N side of north window, window sill
211 Ext	12/23/2013	1254	0.605		Northern sill - Exterior
211Ext	12/23/2013	1254	0.119		Southern sill - Exterior
211 Ext	11/11/2014		<0.5		Northern Sill
CAFETERIA					
INTERIOR					
Caf I - WWS	3/22/2012		<0.2		Interior, caf sill, center window, center
Caf I - EWS	3/22/2012		<0.2		Interior, caf sill, 2nd window from south end, center

Table 2
EPOXY COATED SURFACES
WIPE SAMPLE RESULTS

SAMPLE ID	Date	Aroclor	Concentration ug/100cm^2	Notes	SAMPLE LOCATION and COMMENTS
EXTERIOR VERTICAL CAULKED JOINTS					
201 E - CJS	4/6/2012		<0.20		epoxy coated PCB-contaminated caulk joint on north side of north window
203 E - CJN	4/6/2012		<0.20		epoxy coated PCB-contaminated caulk joint on north side of north window
205 E - CJM	4/6/2012	1254	0.39		epoxy coated PCB-contaminated caulk joint in between windows
207 E - CJ	3/22/2012	1254	0.35		epoxy coated PCB-contaminatedcaulk joint on north side of north window
207 E - CJS	4/6/2012	1254	**1.35**		epoxy coated PCB-contaminated caulk joint on south side of south window
211 E - CJ	3/22/2012	1254	**3.99**		epoxy coated PCB-contaminatedcaulk joint in between windows
2011 E - CJS	4/6/2012	1254	**6.19**		epoxy coated PCB-contaminated caulk joint on south side of south window
2011 E - CJM	4/6/2012	1254	**4.37**		epoxy coated PCB-contaminated caulk joint in between windows

Table 2
EPOXY COATED SURFACES
WIPE SAMPLE RESULTS

SAMPLE ID	Date	Aroclor	Concentration ug/100cm^2	Notes	SAMPLE LOCATION and COMMENTS
BLANKs					
Field Blank	10/22/2012		<0.20		Field Blank
Blank	10/23/2012		<0.20		Blank
Field Blank	10/26/2012		<0.02		Blank
Blank-1	12/28/2012		<0.02		Blank
Blank	7/27/2017		<0.2		
Blank	8/31/2017		<0.2		

Notes:

All samples collected as hexane wipes over a 100 square centimeter (cm^2) area.

Samples with suffix A or C, following room # designation, analyzed by Pace.

Samples with suffix B or D, following room # designation, analyzed by Spectrum.

Regulatory exposure limit for unrestricted use in school is 1 ug/100 cm^2

<0.1 = Not Detected at the Practical Quantitation Limit (PQL).

* indicates sample was spilt between 2 different laboratories and the average result was <1ug/100cm^2

Bold indicates value greater than 1 ug/100 cm^2

Orange highlight indicates that value is no longer applicable due to remedial measures taken

Green Highlight indicates value following re-sampling and analysis only

Yellow Highlight indicates value following re-encapsulation of porous surface with 2 coats of Sikagard® 62, an epoxy resin sealant

Purple highlight indicates the epoxy coated PCB-contaminated cau,ling was subsequently removed

In February 2014, 2 coats of Sikagard® 62 was applied over the original epoxy coating in classrooms 201, 203 & 205 due to unfavorable PCB wipe test results in December, 2013. Sample 205E Int is representative of post epoxy re-coating of these areas.

I = Interior of Room

E = Exterior of Room

EC = Epoxy Coating

A = Epoxy coated CMU Block adjacent to former window caulk

B = Wall or other interior surface

Br = Brick face

CC - Concrete Column

PC = Pebbled Concrete

CJ = Caulked Joint

WS = Window Sill

APPENDIX A

TIMELINE APRIL 2011 – AUGUST 2017

Timeline of Events Associated with PCB Mitigation
Thomas Prince School (K-8)
170 Sterling Road
Princeton, Massachusetts

April 27-29, 2011

- Building materials window caulking and glazing were sampled as part of the Massachusetts School Building Authority Green Repair Program window replacement project to replace aged windows in six, first floor classrooms 201-211, and in the roof top windows associated with the kitchen/auditorium. Asbestos and PCB's were detected in these materials. PCB in exterior materials ranged from 915 ppm (glazing) to 6850 ppm (caulk).

June 23, 2011

- Additional characterization of the caulking and substrate (concrete & brick) was performed. Ranges of PCB detected were:
  - -Interior Caulk – 113 ppm to 221 ppm (first floor classroom windows)
  - -Exterior Caulk – 30,200 ppm (first floor classroom windows)
  - -Exterior Caulk - 118 ppm (roof top windows)
  - -Exterior Concrete - <0.0597 ppm to 4.720 ppm (first floor windows)
  - -Exterior Brick - 0.123 ppm to 3.05 ppm (roof top windows)

August 1, 2011

- Indoor Air Samples (1st event) collected by Environmental Compliance Services, Inc. (ECS) from classrooms 201/211. Results were greater than applicable EPA Calculated Exposure Levels for Evaluating PCB's in School Indoor Air (EPA Guidance Levels).

August 17, 2011

- Meeting with Wachusett Regional School District (WRSD), Town of Princeton and ECS to discuss results and conceptual plan going forward. Conceptual Plan included:
  - -Inspect all light ballast's in old building and replace as necessary
  - -Collect IAS from all classrooms in "older" building and select classrooms in "newer" building
  - -Collect IAS from Common Area Rooms and Hallways in "older" building
  - -Collect wipe samples
  - -Obtain ventilation specifications
- ECS performs limited inspection of building. Met with custodian and ventilation company (Quabbin Controls, Inc.). Developed initial conceptual comprehensive IA and wipe sampling plan and coordinated sampling initiative.

August 18, 2011

- Notification made to Massachusetts Department of Environmental Protection (MassDEP, Kevin Daoust)
- Notification made to Massachusetts Department of Public Health (MassDPH).

August 19, 2011

- Massachusetts Bureau of Environmental Health (MassBEH) Environmental Toxicity Program returned notification call (Kari Sarpartus). MassBEH said it would be most beneficial if the Town of Princeton contacted MassDPH directly.

August 20, 2011

- Collected Indoor Air Samples (46 each) and Wipe Samples (60 each). This was 2nd IAS event. Results indicated "older" portion of building exhibited elevated levels of PCB's in indoor air though only two additional classrooms contained levels above appropriate EPA Guidance Levels. The majority of wipe sample results were less than the 1 ppm high occupancy standard for schools.

August 24, 2011

- Meeting with WRSD, Town of Princeton, Triumvirate Environmental Services, Inc. (TEI) and ECS to discuss conceptual strategy to address PCB's detected in the school. This included:
  - -Restrict occupancy of 100 wing and 200 wing classrooms

-Perform "pilot tests" on one classroom from each wing that registered the highest indoor air concentration reading. The "pilot test" would include the inspection/appropriate removal of light ballast, removal of interior/exterior window caulking/glazing, cleaning of unit ventilators, cleaning of classrooms;
-Restrict access to the common areas (kitchen/cafeteria, computer room, library and hallways in older building) pending cleaning and additional IAS;
- Inspect and change lighting fixtures/ballast in the "older" portion of the school as appropriate
-Clean classroom furniture in the "older" building, move to Gymnasium for temporary storage, sample and reuse as appropriate.

- Verbal notification made to the United States Environmental Protection Agency (US EPA – Kimberly Tisa, Region 1 PCB Coordinator) of the detection of PCB's in window related caulking and indoor air.

August 25, 2011

- Meeting at Thomas Prince School (USEPA - Kimberly Tisa, WRSD – Dr. Thomas Pandiscio, Peter Brennan & Mary Cringon, Town of Princeton - John Lebeaux, TEI – Paul Connors & Ross Hartman, and ECS – Chuck Klingler. The following items were discussed, required and/or agreed to:
    - Conceptual mitigation plan. No formal notification to USEPA required for "pilot test";
    - Requirement that doors in 100-200 wing hallways to be closed (as allowed by building inspector) to limit migration of indoor air;
    - Requirement that all lights in older building be inspected and ballast/fixtures be removed as appropriate;
    - Requirement of an "Interim Report" presenting assessment data in Text, Tables and Figures;
    - Requirement that post cleaned furniture to meet 1 ug/100cm^2 cleanup standard for high occupancy use in schools prior to reuse;
    - Agreement that books and other classroom materials would only be required to be cleaned with HEPA vacuum if dust was observed, no post cleaning wipe sampling required;
    - Requirement of the implementation of EPA recommended Best Management Practices to limit further potential exposure to PCB's by occupants and guests of the building;
    - Requirement that further extent delineation of caulk and substrate, including the windows that were replaced in 1991 in the 100 wing and others as applicable, be performed (to be completed prior to submitting abatement plan). Indication that the caulking from the 'newer" windows in the 100-wing classrooms likely contains PCB that either leached from the substrate that previously was in contact with the former PCB caulking or currently in contact with remnant of PCB caulking and would likely require removal;
    - Indication that some degree of encapsulation would likely be approved for substrate, based on results of further delineation assessment;
    - Requirement that soil along 100 and 200 wings to be samples and analyzed for PCB;
    - Recommendation that cleaning of carpet in library be performed;
    - Requirement that if PCB's remain in the building, that a deed restriction would be required and that the remaining PCB could be addressed at time of building demolition;
    - Requirement that formal notification with Abatement Plan Report needed prior to performing actual PCB abatement activities;
    - Requirement that Long Term Monitoring of indoor air and exposed surfaces will be necessary if PCB's remain in building.
- Public meeting with School Committee at High School

August 26, 2011

- Collected wipe samples from 10% of cleaned furniture from rooms 201, 203, 205, 207, 209 & 211 located in Gymnasium.

August 29, 2011

- Meeting at TPS and with Princeton Board of Selectmen (TEI and ECS);

- Collected wipe samples from 11% of cleaned furniture from rooms 104, 106, 108 and 110 located in Gymnasium.

August 30, 2011

- Performed detailed review of 1989 building plans for ventilation systems present at the school;
- Meet Quabbin Controls (Craig) to go over details of ventilation systems and to inspect select classroom unit ventilators;
- Collected wipe samples from 11% of cleaned furniture from room 100 located in Gymnasium and unit ventilators 106 and 209;

August 31, 2011

- Meeting with WRSD, Town of Princeton, Covino Associates, Woodard and Curran, Strategic Building Solutions and ECS to discuss potential funding for aspects of the project through the Green Repair Program;
- School inspected by ECS following the meeting to review signage for restricted areas and check that classroom doors were locked.

September 1, 2011

- School Opened for session. Older portion of school restricted for access by students pending completion of relevant aspects of proposed conceptual mitigation plan.
- Collected wipe samples from 29% of cleaned kitchen tables and associated chairs.

September 2, 2011

- Conference call with TEI to discuss scheduling – Ballast inspection/removal, emergency waiver for asbestos removal, cleaning of computer room, pilot test, use of 2 coats of epoxy sealant for encapsulation following caulk removal. Start pilot test in RM 209 & then proceed to RM 106, one at a time. Caulk removal from windows (interior and exterior), exterior intake air vent shrouds (both rooms), exterior caulking on building at pilot test rooms.
- Obtained results from RM 100 band – need to be re-cleaned and re-sampled.

September 3, 2011

- Obtained results from cafeteria tables wipe samples – need to be re-cleaned and re-sampled.

September 6, 2011

- TEI inspecting ballast and re-cleaning furniture.
- ECS re-sampled 20% of kitchen tables and attached chairs, 10% of kitchen folding chairs, 11% of RM 100 furniture and exterior of pizza warmer. All results favorable.

September 7, 2011

- Meet at school with John Lebeaux and Paul Connors to discuss schedule, cleaning SOP, hallway cleaning, caulking removal from pilot test rooms. Cleaning will involve HEPA and wet wipe surfaces. Caulking will be removed from pilot test rooms (209 & 106) and adjacent areas sealed with Sikagard 62. Ballast/fixtures to be removed as required.
- Woodard and Curran collected soil samples from courtyard areas and in front of 100-wing rooms.

September 8 & 9, 2011

- TEI has inspected all lights in 100-wing, 200-wing, cafeteria, kitchen, back room of kitchen, boiler room, staff dining room, stage and electric room.
- TEI initiated cleaning several common area rooms.

September 12, 2011

- Meet at school with John Lebeaux and Paul Connors to discuss schedule & status. Discussed pilot test and containment for caulking removal. ECS will complete oversight and clearance sampling for asbestos.
- ECS presented cleaning specifications to TEI, specifying to start from top and work way down to floor. These were accepted. Air handlers to be accessed by opening panels, HEPA vacuum areas easily accessible.

September 14, 2011

- Quabbin onsite balancing flows for unit ventilators in rooms 106 and 209 for pilot test. Flows were 175 cfm for room 106 and 185 cfm for room 209.

- Room 209 – Interior window caulking removal complete. Unit ventilator cleaning complete. Most of exterior vertical joint calking removed except for air intake louvered vent.
- Room 106 – Interior/exterior window/vertical joint caulking removal in progress.
- 200-wing Hallways and mid E-W Hallways fully cleaned. All OK except east entrance near office. 100-wing Hallway needs cleaning.
- Room 113 fully cleaned, needs chair bottoms wiped.
- Library – all surfaces fully cleaned above shoulder height.
- Cafeteria – cleaned all walls, I-beams on ceiling, all other exposed horizontal surfaces.
- Kitchen, stage and computer room to be cleaned tomorrow.
- Pilot test classrooms 106 & 209 will be completed tomorrow, with asbestos clearance sampling also.

September 15, 2011

- Set date of 9/23/11 to collect post pilot test indoor air samples.
- Rooms 106 & 209 cleared for asbestos. These rooms to be fully re-cleaned.

September 16, 2011

- Rooms 106 & 209 - collect wipe samples from interior of window concrete substrate prior to sealing with epoxy coating.

September 19, 2011

- All common rooms are cleaned, floors vacuumed.
- All suspect ballast/fixtures removed from common area rooms – totals: 57 Ballast, 74 Light Fixtures and 20 plastic covers
- Opened doors to 106 & 209 to get cross ventilation in older building (other classroom doors shut). Blowing ambient air into room 106 and indoor air out of room 209.
- Made sure that unit ventilators and exhausts were on in rooms.
- Vents and exhausts on in cafeteria, computer lab and library.
- Window substrate in 106 & 209 sealed with 2 coats Sikagard 62® epoxy coating

September 20, 2011

- ECS inspected school. The following rooms are thoroughly cleaned including, where applicable, floors, carpet, sound proofing board “wood silk”, horizontal surfaces, vertical surfaces, table tops, chair bottoms, equipment surfaces, I-beams (cafeteria), soffit (library), unit ventilators (RM 106 & 209), air handlers (where accessible with HEPA vacuum), window sills, etc.:
    - Kitchen
    - Cafeteria
    - Stage
    - Computer lab
    - Rom 113
    - Library
    - Hallways
    - Rooms 106 & 209
    - Unit ventilators in rooms 106 & 209 (interior and exterior HEPA vac’d and wet wiped)
    - Air handler ventilators (cafeteria, computer lab, library – HEPA vac’d under access panel)
- Vents and exhausts operating in rooms 106, 209, cafeteria, computer lab, 113 & library;
- Library & computer room rugs vacuumed, floors cleaned;
- All ballast removed from common area rooms (not yet removed from bathrooms or boiler room, no anticipated problems with IAS due to this);
- All caulking (interior/exterior) associated with the windows in rooms 106 & 209 has been removed;
- All exterior caulking on vertical/horizontal seams associated with rooms 106 & 209 has been removed;
- All caulking associated with exterior louver air intake vent housings for rooms 106 and 209 has been removed;
- Checked air sampling equipment inventory delivered to site.

September 22, 2011

- ECS performed 3rd round of indoor air sampling and post room cleaning wipe samples.

September 23, 2011

- ECS collected substrate building materials samples.

September 29, 2011

- Received indoor air sampling results from September 22 sampling. All favorable except room 209 which showed no appreciable decrease. Will have to evaluate next step.
- **October 4, 2011**
- Students re-occupy common room areas, i.e. cafeteria, library, computer lab, room 113 and associated hallways.

October 5, 2011

- ECS met at school with TEI to inspect rooms 209 and 106 to note any differences in conditions of rooms that would have led to unfavorable results for air within room 209. Rooms were inspected thoroughly, noted differences in rooms were:
    - Room 209 – appreciably more bulletin boards (cork boards) than in room 106.
    - Room 209 – one light ballast removed.
    - Room 209 – paint – light blue in color.
    - Room 209 – original windows (1962) with exposed glazing.
    - Room 106 – sound proofing carpet board on one wall.
    - Room 106 - two light fixtures removed.
    - Room 106 - paint – off-white color
    - Room 106 – newer (1991) vinyl clad window.
- It was determined that the most likely aspect potentially giving rise to the indoor air PCB's was the older window with exposed glazing present in room 209.

October 14, 2011

- Conference call meeting with John Lebeaux, Paul Connors, Peter Brennan and Mary Cringon. It was decided that:
    - The old windows would be removed from room 209.
    - The exposed substrate around the former windows would be washed and rinsed and that the areas would be sealed with 2 coats of epoxy sealant.
    - Other observed apparent caulking in the room (i.e. around door jambs, structural support beams) would be sealed with epoxy (even though room 106 contained similar apparent caulking).
    - The unit ventilator would be more thoroughly cleaned.
    - The room would be re-cleaned.
    - The room would be ventilated.
    - Indoor air sampling would again be conducted following completion of the above items.

October 19, 2011

- Meeting at the school between ECS, TEI and Mary Cringon. The following were discussed:
    - November 1, 2011 – the band needs be moved from the gymnasium and back to room 100 as basketball season is starting.
    - Other 100-wing classrooms need to be opened to supply learning space for children as the roof work will begin around thanksgiving.
    - Rooms will have to be thoroughly cleaned.
    - Abatement plan to propose to EPA would include temporarily sealing the caulking and concrete block associated with the 100-wing windows until such time that it could be economically removed.

October 25, 2011

- Meeting at the school between ECS, TEI, Town of Princeton and WRSD. It was determined that:
    - Thorough cleaning of the 100-wing rooms and unit ventilators would be initiated on October 31, 2011.

- Since the indoor air within rooms 100, 102, 104 & 110 were previously below EPA Guidance Levels for PCB's, and room 106 was currently below guidelines, the indoor air of these rooms would not have to be re-sampled prior to re-occupancy. Indoor air of room 108 would be re-sampled following cleaning.
- Soil sampling outside of the 100-wing rooms to determine extent of impact to soil would be performed as soon as possible.

October 26, 2011

- Inspect cleaning progress of 100-wing rooms. Needed more work.

November 2, 2011

- Inspected cleaning progress of additional 100-wing rooms, all look very good.
- Containment set up in room 209 for window removal portion of pilot test.

November 3, 2011

- Inspected room 209. Windows removed and space boarded up. All horizontal surfaces cleaned.
- Containment for window removal previously set up in room 209 is removed.

November 7, 2011

- Inspected room 209 prior to indoor air sampling scheduled for November 8. Room being ventilated, all doors are sealed with polyethylene sheeting. Unit Ventilator is running and have new filters. Sikagard 62® was present on internal vertical caulking joints (doorways, support beams). Room all set for air sampling.

November 8, 2011

- Indoor air samples collected from rooms 209 and 108. The results were favorable, being below applicable EPA Guidance Levels. This was the 4th indoor air sampling round performed at the school.
- Cleaning of other 100-wing rooms completed by TEI today.

November 9, 2011

- Meeting at school with ECS, Paul Connors and John Lebeaux. Discussed:
  - Room mitigation results.
  - Indoor air sampling.
  - Window removal.
  - Soil sampling results and required excavation.
  - Computer CPU's to be taken out as universal waste.

November 11, 2011

- Provided a status update via e-mail to USEPA (Kimberly Tisa) regarding the interim measures taken at this site.

November 21, 2011

- The "band" class reoccupies classroom 100.

December 27, 2011

- Completed excavation of soil adjacent to 100-wing classrooms.

January 2, 2012

- Excavation area is backfilled.

January 5, 2012

- Meeting at TPS (USEPA, Kim Tisa; Town of Princeton, John Lebeaux; WRSD, Thomas Pandiscio, Peter Brennan and Mary Cringon; TEI, Paul Connors & Ross Hartman; and ECS, Chuck Klingler). Discussed progress of project and specifics to be included in Risk Based Plan including proposed window and associated window caulk removal, epoxy coating, room cleaning and unit ventilator cleaning.

January 6, 2012

- Collected additional building materials samples from interior/exterior areas for further delineation.

January 8, 2012

- Site inspection by ECS to obtain critical linear measurements and photo documentation.

January 18, 2012

- Submit initial version of Risk Based Site Cleanup and Disposal Plan (RBP) to EPA.

January 20, 2012

- Meeting at TPS to go over Remediation Plans – attendees: (Mary Cringon (WRSD); Paul Connors and Alec Peralta (TEI); Chuck Klingler, (ECS)
    - CORI forms
    - Removal of windows from exterior, critical barriers on classroom window interiors eliminating need for interior negative air during remediation
    - Roof access and interior access for cafeteria/kitchen window replacement activities
    - Required consistency for same foreman each day of work
    - Handling of removed windows (poly wrapped and staging)
    - Placement of PCB Bulk and Remediation waste, proper labelling
    - Schedule meeting with roofing contractor
    - Methods for cleaning of rooms (top to bottom)
    - Quabbin Controls (Craig Wojicki) to remove the fan assemblies (axles which hold motor/fan blades) from unit ventilators for comprehensive cleaning and motor capacitor replacement. QC to balance the flows
    - Methods for cleaning unit ventilators
    - Application of epoxy coatings

January 23, 2012

- Confirmed with Quabbin Controls that fan assemblies and motor capacitors of unit ventilators would be removed from the unit ventilators for cleaning in the near future. Also confirmed that the electrical motor capacitors would be replaced.
- Confirmed that EPA (Kim Tisa) had received the RBP report.

January 30, 2012

- Confirmed meeting for 2/9/12 with roofing contractor FMI. Inc. (Dan Ranahan).

February 1, 2012

- Discussion with American Environmental Consultants (AEC - Mike McCaffrey) re: procedures and monitoring required for the removal of the asbestos containing window caulk. AEC will be performing direct oversight, air monitoring and clearance activities during caulking removal.

February 2, 2012

- Meeting at TPS to discuss window removal (attendees: John Lebeaux (ToP), Peter Brennan & Mary Cringon (WRSD), Dan Ranahan (FMI, Inc.), Franco Garofalo (LBPA), Alec Peralta (TEI), Gary Galanto & Alan Minkus (SBS) & Chuck Klingler (ECS). Discussed project. Tentative schedule set for window removal from 200-Wing classrooms, cafeteria and kitchen (predicated on EPA RBP approval);
- Inspected roof area windows of cafeteria and kitchen.

February 7, 2012

- Meeting at TPS – John Lebeaux (ToP), Paul Connors and Alec Peralta (TEI) & Chuck Klingler (ECS). Discussed details of the planned window removal for 200-Wing classrooms, cafeteria and kitchen, including:
    - Critical Barrier (poly sheeting)
    - Window removal and handling and temporary staging
    - Work on roof
    - Caulking removal and temporary storage
    - Asbestos monitoring and clearance sampling
    - Epoxy encapsulant application methods

February 13, 2012

- Submit responses to EPA pertaining to comments of 2/10/12 to the RBP.
- Submit Final Risk Based Site Cleanup and Disposal Plan, revision 1 (inclusive of EPA edits) to EPA.

February 14, 2012

- Collect additional building materials samples.

February 21, 2012

- Set-up equipment and critical barriers for PCB abatement of 200-Wing classrooms, cafeteria and kitchen.
- Obtained verbal approval from EPA to begin the remediation project (approval obtained late afternoon).

February 22, 2012

- East and West side cafeteria windows removed and openings sealed with plywood. Visual inspection OK and final air clearance sampling complete and OK.

February 23, 2012

- Epoxy coating applied to interior east/west window sills of cafeteria. East end bank of kitchen windows removed.

February 24, 2012

- No work performed due to heavy snow cover.

February 25, 2012

- Remainder of kitchen windows removed and openings sealed with plywood. Visual inspection OK and final air clearance sampling complete and OK.

February 27, 2012 to March 19, 2012

- Mitigation of 200-Wing classrooms is performed. This includes window removal from the exterior, caulking removal from the exterior (window openings and air intake louver vent covers for the unit ventilators), interior and exterior dust monitoring, interior asbestos monitoring, collection of background air samples, visual inspections of completed work areas, final clearance sampling and approvals, thorough cleaning of classrooms and unit ventilators, application of 2 layers of epoxy coating (Sikagard 62®) to interior/exterior substrate surfaces surrounding windows, removal of exterior vertical/horizontal caulk joints associated with air intake vents and application of 2 layers of Sikagard 62® epoxy coating to these areas.

February 28, 2012

- Thorough inspection of entire work area. Critical barriers in-place for all 200-Wing classrooms. Procedures for abatement, visual inspections, sampling and waste storage being followed. Wooden, poly lined exterior enclosures to be constructed on 2/29 at each window for temperature control for epoxy coating application.

February 29, 2012

- Meeting with John Lebeaux to discuss progress. Additional building material samples collected. Wooden, poly lined exterior enclosures at the 200-Wing windows installed.

March 1, 2012

- "Post Abatement Air and Surface Wipe Sample Locations" letter dated 2/29/12, e-mailed to EPA (Kim Tisa). ECS performed thorough inspection of classrooms 201, 203, 205, 207, 209 & 211. Epoxy application looking good. Unit ventilator interiors and axle assemblies require further cleaning.

March 7, 2012

- Meeting at TPS (Paul Connors & Alec Peralta (TEI), Chuck Klingler (ECS)) to go over specifications for abatement of 100-Wing classrooms.

March 8, 2012

- Window and caulk removal from the 200-Wing classrooms complete.

March 19, 2012

- ECS performs final inspection of work completed by TEI for Int/Ext of 200-Wing classrooms, cafeteria and kitchen – Looked good except: unit ventilators appear to require further cleaning; exterior air intake louvers require cleaning (as replacement louvers could not be readily located); epoxy coatings needed for cafeteria windows.

March 22, 2012

- ECS performed initial post abatement indoor air and wipe sampling of 200-Wing classrooms, cafeteria and kitchen (this was the 5th round of indoor air sampling completed).

April 6, 2012

- Meeting with John Lebeaux (ToP), Paul Connors (TEI) and Chuck Klingler (ECS). Discussed indoor air and wipe sampling results from March 22, 2012 sampling event and plan to move forward. Additional wipe samples collected.

April 11, 2012

- Meeting with Paul Connors to continue discussion on mitigation of 100-Wing classrooms.

April 13, 2012

- Meeting with John Lebeaux (ToP), Paul Connors (TEI) and Chuck Klingler (ECS) at TPS to discuss project status. Met with Dan Ranahan and inspected exterior louver vents near cafeteria window openings.

April 16, 2012

- Inspected recent epoxy coating for roof top exterior kitchen/cafeteria and interior kitchen. Met with Sika representative. TEI addressing west cafeteria side, removing trace residual caulk and will apply epoxy coating.

April 17, 2012

- Inspect work completed by TEI. Meeting between Peter (LBPA), Dan Ranahan (FMI), Alec Peralta (TEI) to discuss roof-top air intake louvers. Caulk samples collected from around roof-top air intake louvers. Interior duct work of roof-top lovers was inspected. Unit ventilator for classroom 211 requires additional cleaning.

April 25, 2012 and May 4, 2012

- Additional wipe samples were collected.

May 30, 2012

- Post abatement punch list walkover with Jim Covello (WRSD) was performed.

July 12, 2012

- Meeting at TPS, John Lebeaux (ToP), Paul Connors & Alec Peralta (TEI) and Chuck Klingler (ECS). All new windows installed in cafeteria and 200-Wing classrooms. Kitchen window installation in progress. Water test to check window tightness scheduled for August 25th. August 28, 2012 is first day of school for children.

August 14, 2012

- Report titled "Modification: Risk Based Site Cleanup and Disposal Plan" submitted to EPA (Kim Tisa). This modification was for additional abatement of the 100-Wing classroom window caulking and adjacent substrate, cleaning of the unit ventilators, removal/replacement of unit ventilator electrical capacitors, thorough cleaning of the classrooms, removal of the exterior horizontal/vertical caulking associated with the concrete window columns and air intake vents and removal of the 200-Wing exterior horizontal/vertical caulking associated with the concrete window columns. The cleaning of all air intake louvers and vents HEPA vacuum and wipe down.

August 29, 2012

- Meeting at TPS – Attendees – Kim Tisa (EPA), John Lebeaux (Town of Princeton), Mary Cringon (WRSD), Paul Connors (TEI), Chuck Klingler (ECS). Purpose was to discuss requirements for final mitigation activities.

August 30, 2012

- Clarification on the cleaning of the interior surfaces of the 100-Wing classroom unit ventilators – sent to EPA (Kim Tisa) from ECS (Chuck Klingler).

September 2, 2012

- Letter submitted to EPA (Kim Tisa) by ECS (Chuck Klingler) to clarify several of the Modification items.

September 5, 2012

- Meeting at TPS – Attendees John Lebeaux (ToP), Mary Cringon (WRSD), Paul Connors, Alec Peralta & Ross Hartman (TEI), Craig Wojicki (Quabbin Controls), Chuck Klingler (ECS) to discuss the work to occur to abate the 100-Wing classrooms as part of the RBP Modification. The collection of additional caulk and brick samples.

September 6, 2012

- Clarifications letter sent to EPA (Kim Tisa) from ECS (Chuck Klingler) re: 100-Wing air intake vents and 200-Wing air intake louvered vent covers.

September 10, 2012

- Clarification e-mail sent to EPA from ECS regarding the occupancy of the 100-wing classrooms during abatement and sampling clarification for the 200-Wing exterior louvered vent covers.

September 17, 2012

- Received EPA written approval for the RBP Modification

September 25, 2012

- Meeting at TPS Paul Connors & Alec Peralta (TEI), Chuck Klingler (ECS) – Professional water-proofer to apply bond breaker backing and caulking to vertical joints, caulking around windows and to apply the epoxy coatings. Asbestos monitoring will also be required during the removal of the caulking.

October 11, 2012

- Meeting with Mike McCaffrey to go over scope-of-work for upcoming asbestos monitoring during the removal of caulk.

October 15, 2012 – November 5, 2012

Work related to the Modification of the Risk Based Site Cleanup and Disposal Plan was initiated on October 15th and completed in November 5th, 2012. Note that classrooms 100/110 were not occupied during the work. Work related to the exterior of classrooms 201/211 was performed in the afternoon following school dismissal. The work consisted of:

- Installation of critical barriers on the interior sides of the windows for classrooms 100/110;
- Construction of mini-containments on the exterior of the windows for classrooms 100/110 and 201, 203, 205, 207 & 211;
- Removal of the windows from classrooms 100/110;
- Removal of residual PCB contaminated caulk from the widow openings for classrooms 100/110;
- Removal of the exterior vertical joint caulk from around the concrete window columns for classrooms 100, 102, 104, 108 & 110 (note that the vertical joint caulk associated with the window for classroom 106 had previously been removed as part of the "pilot test" in September, 2011);
- Removal of the caulk from around the exterior air intake vents for classrooms 100, 102, 104, 108 & 110 (note that the caulk associated with the exterior air intake vent for classroom 106 had previously been removed as part of the "pilot test" in September, 2011);
- Removal of the exterior vertical joint caulk from around the concrete window columns for classrooms 201, 203, 205, 207 & 211 (note that the vertical joint caulk associated with the window for classroom 209 had previously been removed as part of the "pilot test" in September, 2011);
- Removal of the caulk from around the exterior air intake vent louvers for classrooms 201, 20-3, 205, 207 & 211 (note that the caulk associated with the exterior air intake vent louver for classroom 211 had previously been removed as part of the "pilot test" in September, 2011);
- Application of two coats of Sikagard 62® epoxy coating to the interior/exterior PCB contaminated substrate surrounding the window openings of the 100/110 classrooms; to the exterior PCB contaminated substrate adjacent to the vertical joints of the concrete window columns of the 100/110 and 201/211 classrooms; and, to the exterior PCB contaminated substrate adjacent to the air intake vents of the 100/110 and 201/211 classrooms;
- Cleaning of the interior surfaces of the unit ventilators of the 100/110 classrooms via wet wipe and HEPA vacuum methods;
- Cleaning of the motor casings and axel units of the unit ventilators of the 100/110 classrooms via wet wipe method;
- Removal of the PCB motor capacitors from the unit ventilators; and,
- Proper Disposal of all generated waste

October 15, 2012

- Install critical barriers (polyethylene sheeting) on the interior side of the windows for the 100/110 classrooms and placed plastic over vents on top surface of unit ventilators;
- Construct mini-containment structure on the exterior of the windows for classrooms 100/102;
- Removed capacitors from unit ventilator motors 100, 102, 104, 106, 108 & 110. Placed in covered, 5-gallon pail and temporarily staged in room 100;
- Clean interior surfaces and associated axle unit and motor casing of unit ventilator for classroom 100;
- Initiate exterior removal of PCB-contaminated window caulk, vertical joint caulk associated with the exterior concrete window columns for classrooms 100/102;

- Initiate removal of PCB-contaminated vertical joint caulk associated with the exterior concrete window columns and air intake louvers for the 200-Wing classrooms; and,
- Collect background dust monitoring samples;
- Wipe samples collected from interior sides of exterior air intake louvers for classrooms 201, 205 & 209 following HEPA vacuum.

October 16, 2012

- Clean interior surfaces of unit ventilator associated axle unit and motor casings for classroom 102, 104 & 106;
- Continue with the removal of PCB-contaminated window caulk, vertical joint caulk associated with the exterior concrete window columns for classrooms 100/102;
- Removal of the windows for classrooms 100/102, wrap windows in poly and place inside of respective classrooms. Windows visually inspected – remnants of caulk observed on metal frame. Observed rigid insulation around sides of window frame – collected samples of insulation for PCB analysis. Collected wipe samples from metal window frame, unit ventilator interior surfaces and motor casings;
- Construct mini-containment structure on the exterior of the windows for classrooms 104/106;
- Continue with the removal of PCB-contaminated vertical joint caulk associated with the exterior concrete window columns and air intake louvers for the 200-Wing classrooms; and,
- Collect background dust monitoring samples.

October 17, 2012

- Clean interior surfaces of unit ventilator associated axle unit and motor casings for classroom 106 (complete), 108 & 110;
- Complete the removal of PCB-contaminated window caulk, vertical joint caulk associated with the exterior concrete window columns for classrooms 100/102 and 104;
- Continue with the removal of PCB-contaminated vertical joint caulk associated with the exterior concrete window columns and air intake louvers for the 200-Wing classrooms; and,
- Collect background dust monitoring samples.

October 18, 2012

- Clean interior surfaces of unit ventilator associated axle unit and motor casings for classroom 108/110 (complete);
- Construct mini-containment structure on the exterior of the windows for classrooms 108/110;
- Complete with the removal of PCB-contaminated window caulk, vertical joint caulk associated with the exterior concrete window columns 108/110;
- Removal of the windows for classrooms 104, 108 & 110, wrap windows in poly and place inside of respective classrooms;
- Complete the removal of PCB-contaminated caulk around the exterior air intake vents for classrooms 100/110;
- Continue with the removal of PCB-contaminated vertical joint caulk associated with the exterior concrete window columns and air intake louvers for the 200-Wing classrooms;
- Collect background dust monitoring samples;
- Complete interior/exterior visual inspection of classrooms 100/110;
- Caulk removal, window removal and unit ventilator phase for the 100-Wing rooms deemed complete and ready for epoxy coating. All critical barriers and containment structures removed.

October 19, 2012

- Complete the removal of PCB-contaminated vertical joint caulk associated with the exterior concrete window columns and air intake louvers for the 200-Wing classrooms;
- HEPA vacuum 100-Wing classrooms;
- All visual inspections completed, critical barriers removed;
- Open vertical joints inspected. Some “backing” remained in several of the open joints. This was removed and portions of joint were recoated with epoxy;
- Collect wipe samples from unit ventilator interior surfaces. Windows and motors will require further cleaning.

October 22, 2012

- 100-Wing classroom window frames and unit ventilator motor casings are re-cleaned via wet-wipe method, i.e. simple green initial wipe followed by hexane final wipe;
- Wipe samples collected from classroom window frames 100, 102, 104, 108 & 110;
- Inspected motor casings, require additional cleaning;
- Wipe samples collected from re-cleaned motor casings 108 & 110;
- Epoxy coatings applied to classrooms – 100/102 exterior (1 coat), 100/102 exterior air intake vents (1 coat).

October 23, 2012

- Several unit ventilator motor casings are re-cleaned;
- Epoxy coatings applied to classrooms – 100/102 exterior (2nd coat), 100/102 exterior air intake vents (2nd coat), 104, 106, 108 & 110 exterior (1^{st} coat), 104, 106, 108 & 110 exterior air intake vent (2nd coat),100, 102, 104, 106, 108 & 110 interior (1^{st} coat);
- Critical barrier installed on interior of window for classroom 106;
- Window for classroom 106, removed, window wrapped in poly and placed inside of classroom 106;
- Wipe samples collected from classroom 106 window frame and unit ventilator motor casings 100, 102, 104 & 106;
- All 100-Wing window openings boarded up.

October 24, 2012

- Epoxy coatings applied to classrooms – 104, 106, 108 & 110 exterior (2nd coat), 104, 106, 108 & 110 exterior air intake vent (2nd coat), 100, 102, 104, 106, 108 & 110 interior (2nd coat), 207 exterior vertical joints (1^{st} coat).

October 25, 2012

- Epoxy coatings applied to classrooms – 207 exterior vertical joints (2nd coat), 201, 203, 205, 207, 209 & 211 (1^{st} and 2^{nd} coats);
- Replacement caulking not yet installed but all of the vertical joints are ready;
- No windows installed yet.

October 26, 2012

- Finalizing some touch-up with epoxy coating. Installing backing and caulking in vertical joints;
- Wipe samples for classroom window frames 100, 102, 106 and 110 re-collected following additional cleaning due to unfavorable results.

November 2, 2012

- Re-sample motor casings at classrooms 100 & 106 following re-cleaning;
- New caulking has been applied to all subject vertical joints, on-top of epoxy coating;
- Windows for 100-Wing classrooms to be installed on November 5, 2012.

November 5, 2012

- Re-sample motor casing at classroom 106 following re-cleaning.

December 28, 2012

- Complete Post Abatement Indoor Air and Wipe Sampling following completion of all required PCB remediation activities (6^{th} indoor air sampling round).

December 23, 2013

- Annual indoor air and wipe sampling round and epoxy coating inspections 1 year following completed abatement activities (7^{th} indoor air sampling round).

January 24, 2014

- Re-collect wipe samples and split between two laboratories due to 3 samples being above 1 ug/100cm^2 from rooms 210, 203 & 205.

February 19, 2014

- Reapply Sikagard 62® epoxy coating to interior concrete block around windows in classrooms 201, 203 & 205.

February 24, 2014

- Collect confirmation wipe sample from re-applied interior epoxy coating from classroom 205.

November 11, 2014

- Annual indoor air and wipe sampling round and epoxy coating inspections 2 years following completed abatement activities (8th indoor air sampling round).

February 16, 2016

- Annual indoor air and wipe sampling round and epoxy coating inspections 3 years following completed abatement activities (9th indoor air sampling round).

April 19, 2017

- Annual indoor air and wipe sampling round and epoxy coating inspections 4 years following completed abatement activities (10th indoor air sampling round).

August 24, 2017

- Reapply Sikagard 62® epoxy coating to exterior center of concrete column between windows for classrooms 100/102.

August 31, 2017

- Collect confirmation wipe sample from re-applied exterior epoxy coating between windows for classrooms 100/102.

APPENDIX B

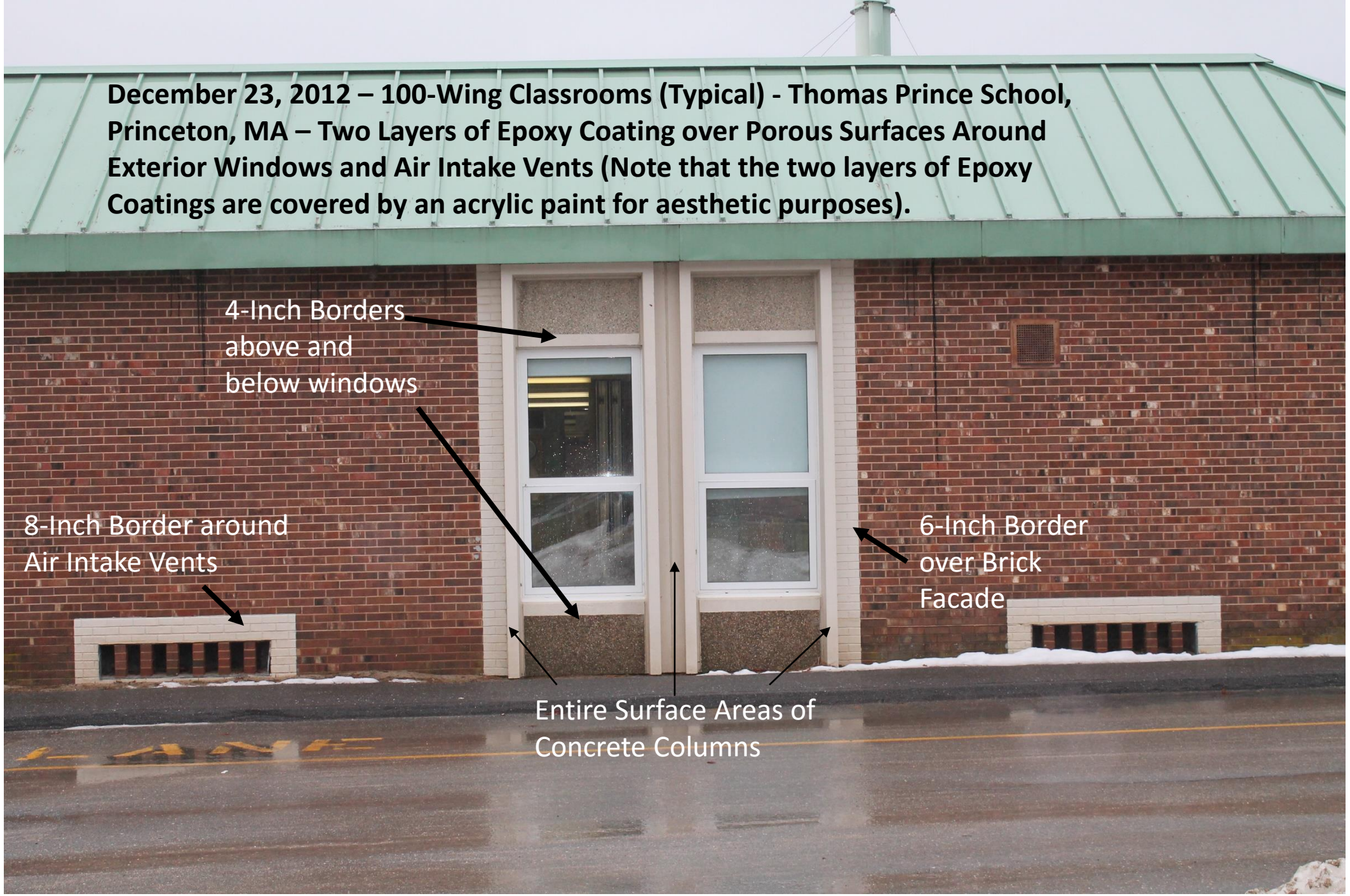
PHOTOS OF REPRESENTATIVE EPOXY COATED POROUS SURFACES APPLICABLE TO THE MMIP

MMIP
October, 2017
Thomas Prince School
Princeton, MA

Photo-Log of Epoxy Coated Surfaces to be Monitored and Maintained

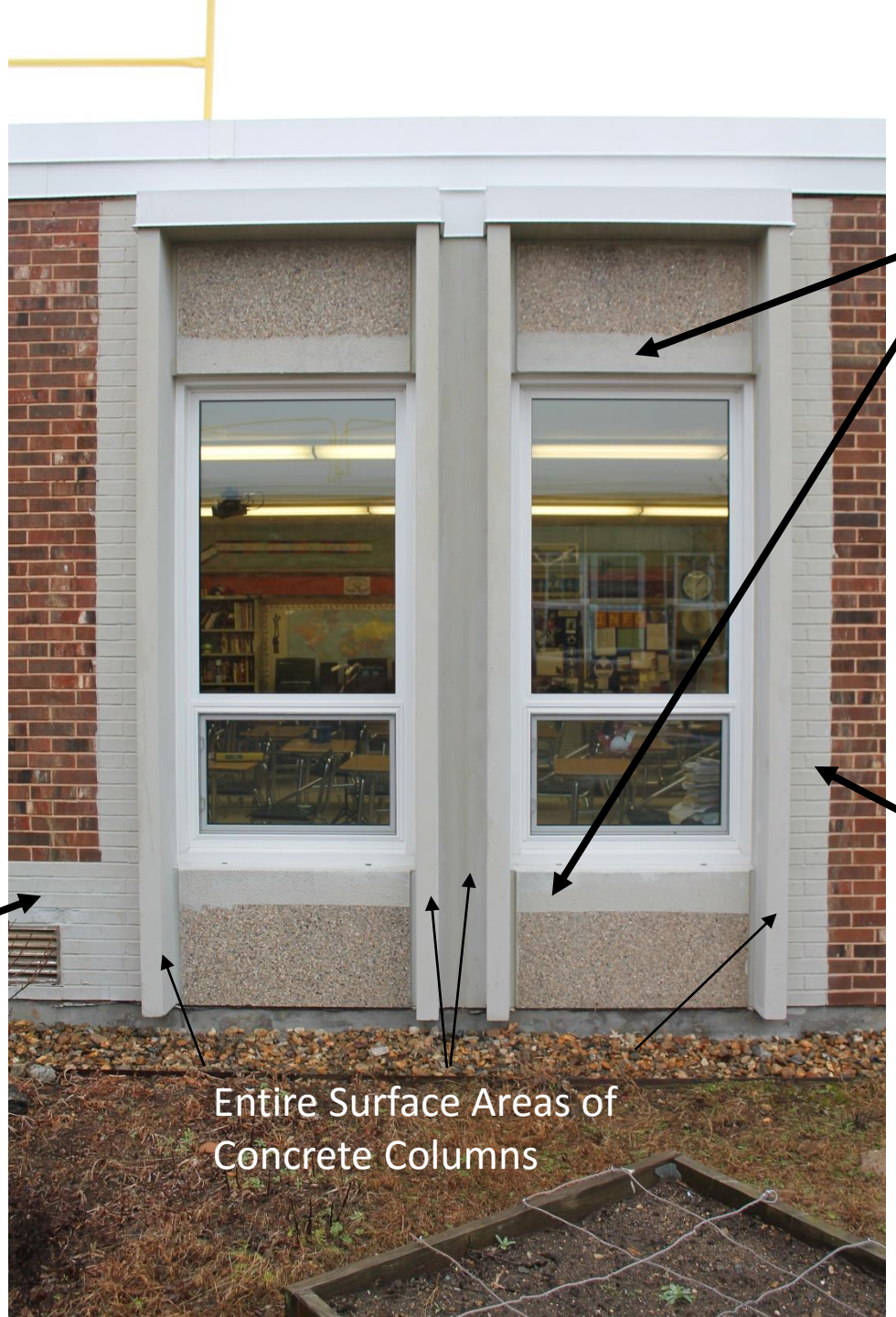
December 23, 2012 – 100-Wing Classroom (Typical) - Thomas Prince School, Princeton, MA – 6” Epoxy Coating border over Porous Surfaces around Interior Windows (Note that the two layers of Epoxy Coatings are covered by an acrylic paint for aesthetic purposes)

Classroom 100


December 23, 2012 – 100-Wing Classrooms (Typical) - Thomas Prince School, Princeton, MA – Two Layers of Epoxy Coating over Porous Surfaces Around Exterior Windows and Air Intake Vents (Note that the two layers of Epoxy Coatings are covered by an acrylic paint for aesthetic purposes).
4-Inch Borders above and below windows
8-Inch Border around Air Intake Vents
6-Inch Border over Brick Facade
Entire Surface Areas of Concrete Columns

December 23, 2012 – 200-Wing Classroom (Typical) - Thomas Prince School, Princeton, MA – Epoxy Coating border over Porous Surfaces Surrounding New Interior Windows

December 23, 2012 – 200-Wing Classrooms (Typical) - Thomas Prince School, Princeton, MA – Two Layers of Epoxy Coating over Porous Surfaces around Exterior Windows (new) and Air Intake Louver. (Note that these two layers of Epoxy Coatings were applied following the removal of the PCB caulk that had been originally left in-place during the 2011 mitigation activities).



December 23, 2012 - Thomas Prince School, Princeton, MA –

Typical Exterior New Vertical Caulk Joint Applied Following the Removal of the Previous PCB Caulk Joint and Application of two Coats of an Epoxy Encapsulant over the Surface of the PCB-contaminated Porous Substrate (i.e. concrete window column).

APPENDIX C

INSPECTION AND MAINTENANCE LOGS TEMPLATE

ANNUAL VISUAL INSPECTION FORM

Thomas Prince School
170 Sterling Road, Princeton, Massachusetts

Date: _____ Room #:_____

Weather: _____

Name of Inspector: _____

Inspection Criteria	Epoxy Coated Porous Surfaces
Is the coating peeling, chipping, or otherwise compromised?	❑ **Yes** **if yes, describe:** ❑ **No**
Is maintenance of the coating needed?	❑ **Yes** **if yes, describe Yes** ❑ **No**
Were wipe samples collected?	❑ **Yes** ❑ **No**

MAINTENANCE LOG FORM

Thomas Prince School
170 Sterling Road, Princeton, Massachusetts

Instructions: Document maintenance activities performed and sign and date to **verify** that activities were performed as indicated in the description of Maintenance Activities Performed.

Room & Date	MAINTENANCE ACTIVITIES PERFORMED
	Signature and Date: